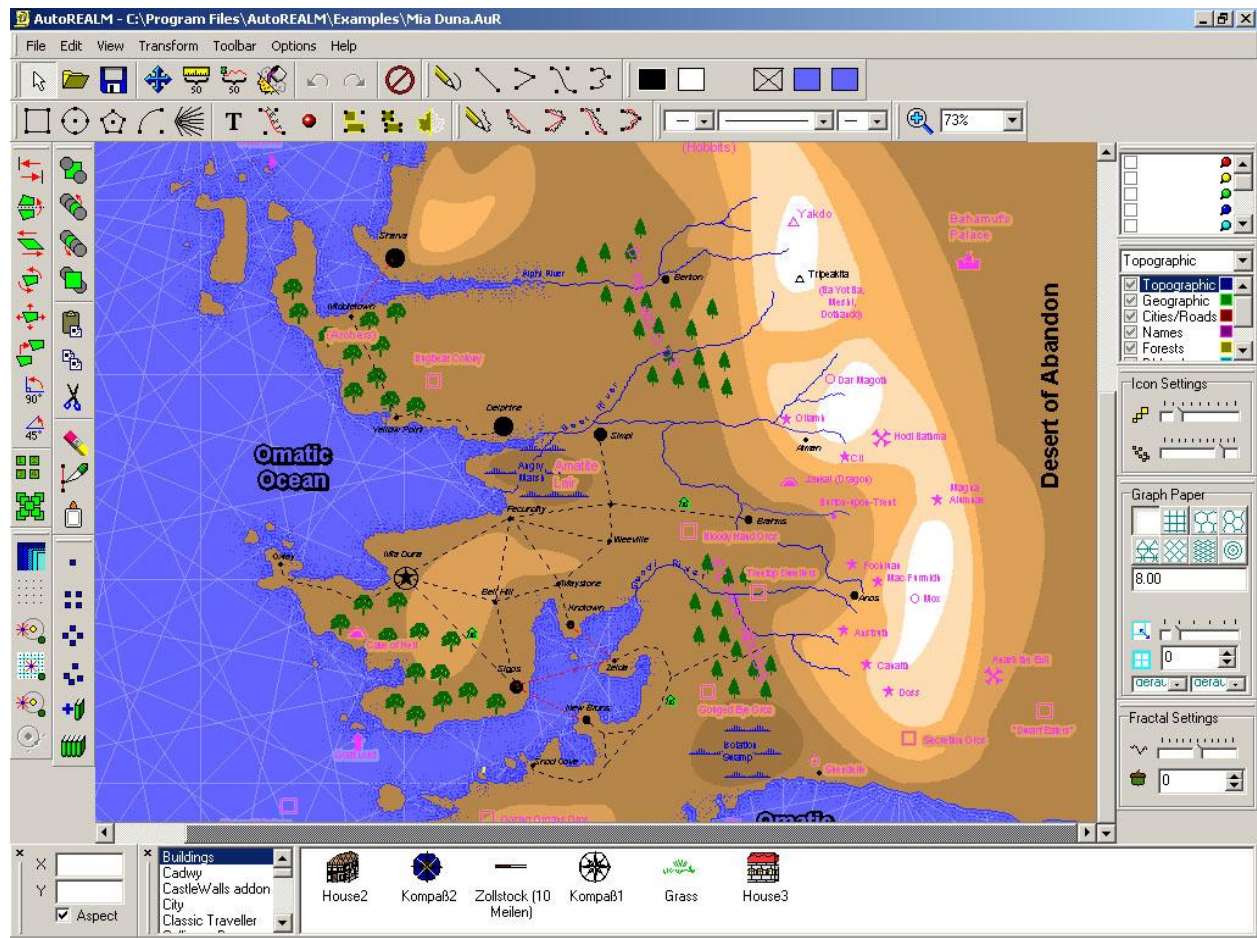


AutoREALM

Users Manual



Version 2.2

<http://autorealm.sourceforge.net/index.php>

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Before You Begin

What is AutoREALM?

AutoREALM is designed to help you make quality role playing maps quickly and easily!

Can't I do this with my existing software?

If you've ever drawn a map in a paint program, you know that they can be inflexible and cumbersome to use. When you inevitably change your mind, you've got lots of tedious pixels to change. And CAD software is too expensive and complex. The learning curve is very steep: you can probably do it with a CAD program, but who's got the time? Other role playing map generators are even built on top of a CAD engine which doesn't hide the underlying complexity. It just makes it worse.

So why is AutoREALM for me?

AutoREALM was built from the ground up with gamers in mind. AutoREALM is packed full of features to make it easy to generate maps for your gaming, whether it be a dungeon, a wilderness setting, a modern romp, or a complete campaign. Overlays make it easy to break your map into logical pieces, and print different maps for yourself and your players (with all the good stuff hidden!). Fractal lines make drawing a river or a coastline as easy as point and click. Lots of measurement tools in player friendly scales (days by foot, days by horse, etc.) make it child's play to figure out how long a trip will take. A fantasy random name generator which makes hundreds of thousands of unique names in several styles. And hundreds of symbols in dozens of categories make finding the right symbol a snap.

Isn't all that functionality hard to use?

Nope. Even paper-and-pencil traditionalists will be swayed by the speed and simplicity with which you can create professional looking dungeons and maps. With an intuitive user interface, even the most complex action is only a click or two away. Almost all functions are accessed by buttons on one of the many toolbars, instead of buried within some menu or dialog. And you can clear away the toolbars that you don't use, or rearrange them to suit how you work.

Using This Help File

Hypertext Features

AutoREALM Help has a few special hypertext features:

Tab Jumps

Each topic has a row of related topics across the top, like this one. The active topic is bold and related topics are shown as hyperlinks. You can access related topics by clicking on them.

Keyboard Commands

If a combination of keystrokes is needed to access a particular feature, it is called a shortcut key. Shortcuts appear as two key names separated by a "+". For example, "Press **Shift+Del**" means hold down the Shift key while you press the Del key.

Technical Requirements


Although AutoREALM should run on any Windows 95, 98, or NT computer, you can get the most out of AutoREALM with these recommended minimums.

Display Size	1024 x 768 or greater
Display Color Depth	16 bits or more (HiColor or TrueColor)
Processor	90MHz Pentium or faster
RAM	16 Megabytes or more

Getting Started

Stating and Exiting AutoREALM

You can start AutoREALM in several ways:

Click , select **Programs**, and click on the AutoREALM icon.

In the Explorer, double-click on any file with the type "**AutoREALM Map**" (i.e. the file has an **.AuR** extension) to start AutoREALM with the selected file open.

In the Explorer, right-click on any "**AutoREALM Map**" file, and choose **Open**.

You can exit AutoREALM in the same ways you would exit any other Windows program.

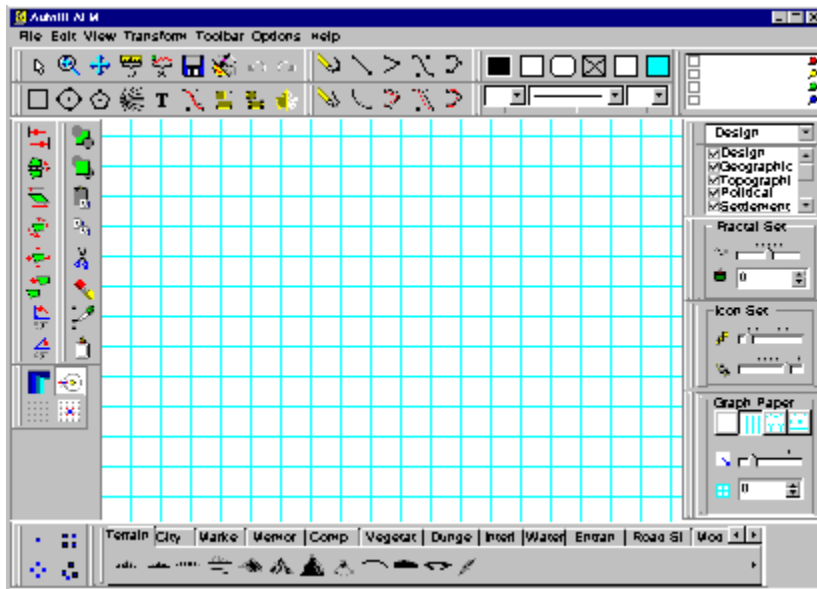
Click on the  in the upper right corner of the program window.

Select File Exit from the menu.

Press **Alt+F4**.

Main Window

After starting AutoREALM, you should see a screen like below:



There are four main regions to AutoREALM's main window:

Titlebar

This displays "AutoREALM", the name of the open file (if any), and the standard Windows controls for closing, minimizing, maximizing, and restoring the window.

Menubar

AutoREALM's menus, which are grouped underneath the main headings. Use **Alt+<underlined letter>** to bring up a sub menu via the keyboard.

Toolbars

Surrounding each edge of the workspace is an area for toolbars. Each toolbar consists of several buttons or controls that can act on the current map. AutoREALM has many toolbars, and they can be turned on or off by selections in the Toolbar menu. You can get a popup hint for any button or control by hovering the cursor over that item for a second or two. For more details about a particular toolbar, click on that toolbar in the above picture.

Workspace

The blue graph paper in the above picture, this is where your map resides.

Menus

Menus in AutoREALM act just like menus in any other Windows application.

Open a menu by clicking on it, or by pressing **Alt** plus the letter that is underlined in the menu's title. For example, to open the File Menu, you would press **Alt + F**.

Choose a menu selection by clicking on it, by pressing its underlined letter, or by using the cursor keys to highlight it and then pressing **Enter**.

Some menu items are more than two levels deep, indicated by a black arrow to the right of that menu item. Clicking on the menu item opens a sub menu for further choices.

Menus and selections that are not currently available appear in gray.

Menu items that end in an ellipsis (...) will open a dialog for further information.

Some menus have shortcut keys that are active at any time. Shortcuts are displayed to the right of the menu item as a key combination (e.g. **Ctrl+B**).

If a menu item has a check mark, it means that the item controls a program state. Repeatedly selecting the item will toggle the check mark on and off, as well as turning on and off the relevant program feature.


Example Maps

AutoREALM is shipped with several example maps. They are in the *Examples* subdirectory of the program installation directory. Select **File | Open** from the menu, and double-click on *Examples*. Then, double-click on any of the .AuR files to open them.

The examples show how to take advantage of the many features that AutoREALM has to offer. Take a look at them for ideas on how to implement your own masterpieces!

Uninstalling AutoREALM

Uninstalling AutoREALM is recommended before installing a newer revision of the program. To uninstall AutoREALM, follow these instructions:

1. Start the **Control Panel** by clicking , select **Settings**, and click **Control Panel**.
2. Double-click on **Add/Remove Programs**.
3. Click on **AutoREALM** in the list of applications.
4. Click the **Add/Remove** button.

The AutoREALM program will be removed from your hard disk, and any AutoREALM specific registry entries and fonts will be removed.

Note: Uninstalling AutoREALM does not remove files created after installation, including any AutoREALM maps or backup files you may have created. This is exactly what you want when uninstalling prior to installing a new version of the program. If however, you are uninstalling to remove AutoREALM from your hard disk, you may need to use the Windows Explorer to completely delete extraneous files in the AutoREALM directory after uninstalling.

Managing Map Files

Opening A File

AutoREALM uses a Single Document Interface, which means that only one map can be loaded at a time. If you want to work with more than one map simultaneously, you can start multiple copies of AutoREALM. There are several ways to open a map in AutoREALM:

From the Open Map Dialog Box

Click **File | Open** in the menu. Select the file you want to open, and click the Open button.

From the Most Recently Used List

Select the File menu. The last few files you've opened appear at the bottom of the File menu, in the order they were last used. Click on one to reopen that file.


From the Windows Explorer

Files in the Explorer that have an *AutoREALM Map* type (files with an .AuR extension) can be opened by double-clicking on the file (or right-click on the file and choose **Open**).

Drag-and-Drop from the Explorer

You can open an AutoREALM file by dragging the file from the Explorer onto an already open AutoREALM session. If you have made changes to the current map, AutoREALM will prompt you to save those changes before opening the new file.

Saving an AutoREALM File (AuR Files)

To save a file, either use **File | Save** in the menu, or click on the disk icon  in the General toolbar. If you have never saved the current file before, you will be prompted for a filename.

Unless you have disabled backups, AutoREALM creates a backup of any file it saves over. The backup file has the same name, but with a ".BAK" extension.

You can use **File | Save As** to save a file to a new name (the old file will remain unchanged).

Saving Bitmaps and Metafiles (.BMP or .WMF files)

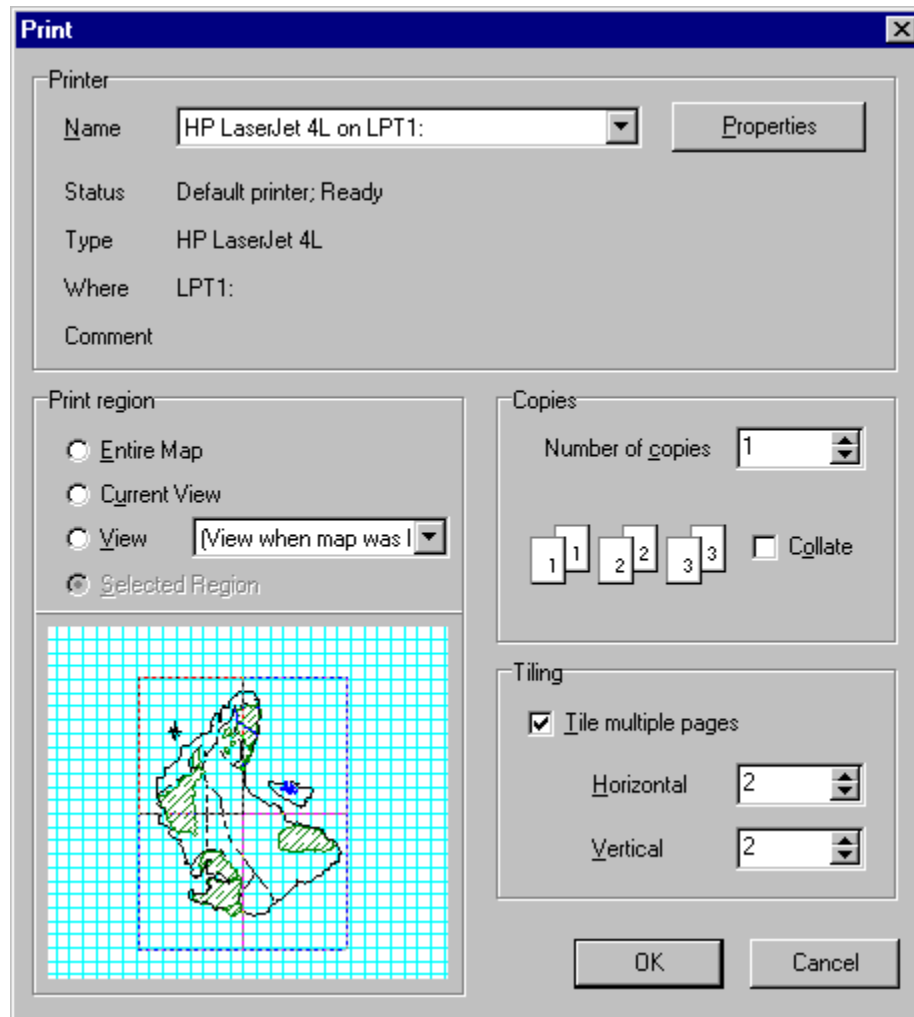
You can save your map as either a bitmap or a Windows metafile for importing into other programs. Select **File | Save As** from the Menu, and use the **Save As Type** box to select either a .BMP or .WMF file. Bitmaps are for imaging, scanning, or painting programs. Metafiles are for object level editing or clipart programs. Some programs like word processors can usually handle either.

The bitmap size is the same as your current zoom level. To make a very large bitmap with a lot of detail, zoom in to the map. To make a smaller bitmap with less detail, zoom out.

Note: You cannot load bitmaps or metafiles back into AutoREALM; if you intend on reloading your map into AutoREALM, you must also save it as an .AuR file.

Printing A File

You can print a file from AutoREALM in two ways. From the Windows Explorer, right-click on an AutoREALM file, and choose Print. The selected file will be printed using the default printer with the entire map on one page. From inside AutoREALM, select **File | Print** from the menu.



Inserting A File

There are three types of files you can insert into an AutoREALM map. They AutoREALM maps, Windows Metafiles, and bitmaps.

Inserting Maps

When you insert another map (an AuR file) into AutoREALM, you only get the objects present in that file. Specifically, you do not get:

- Background colors

- Grid settings

Overlays of any of the constituent objects (the objects are inserted into the currently active overlay)

Views

Pushpins

Map Comments

The original sizing of the inserted file *is* used, however, and the map is placed at the center of the current view. You can resize the inserted map by dragging the hollow red handles. Note that the map inserted is not linked to the original map in any way, so if the original map changes your inserted map will not. The contents of that inserted map can be edited just as any other objects; just use Ungroup to show the individual objects that are part of the map.

Inserting Metafiles


Both standard (WMF) and enhanced (EMF) metafiles can be inserted by AutoREALM. Typically you find these file formats in clip-art collections, but other drawing programs can export metafiles as well. The metafile contents are inserted into the center of the current view, using the active overlay. They can be edited, sized (and ungrouped) just as inserted maps can.

Inserting Bitmaps

Bitmaps (BMP) are inserted as bitmap objects. Bitmaps are inserted into the center of the current view, using the active overlay.

Controlling The Screen

Zoom

The zoom tool  magnifies or shrinks the map view. There are three separate functions bundled into the zoom tool:

Zoom In

Click with your mouse to zoom in one level closer. The new view is centered over the cursor position.


Zoom Out

Right-click to zoom out one level further away.

Zoom Box

Click and drag a region with the cursor. After you release, the view will be changed to contain the selected area.

Panning

The panning tool  allows you to scroll the map in any direction, but does not change the magnification level.

After selecting the panning tool, press (but don't release) the left mouse button over the map. While the button is down, the map will scroll in the direction of your cursor movements. To stop panning, release the mouse button. If you move the mouse with a small motion, the map will pan slowly; large motions make the map pan faster.

While panning, the new areas that come into view are usually displayed as they would normally appear. For very complex maps, you can enable an option for draft displaying that can significantly speed up panning.

Views

A view enables you to easily return the map display to a known state. Views are good for the following things:

- Saving a print area so you can make repeated prints of the exact same location

- Switching between views that have different sets of visible or frozen overlays.

- Retaining distinct graph paper options to superimpose on a map.

Keeping track of areas of the map that are in progress.

A view consists of the following:

Name: The name of a view is entered when you save a view. You cannot directly rename a view. You can however, switch to a view, save it under a new name, and delete the old view.

Position: The current map position and zoom level are saved with each view. If you change the shape of your main window (or if using the view for printing), the view may not display the exact same area as saved. Instead, the view will be scaled so that it fits into the largest space available.

Overlays: The current status of the overlays, i.e., whether each overlay is visible, not visible, or frozen, is saved in a view. This makes it easy to view or hide a large number of overlays as a group.

Grid: All current graph paper options, including if the grid is displayed above or beneath the objects are saved with the view.

These actions are available for views:


To save a view, select **View | Save Current View**. Enter a new name for the view or pick an existing name out of the list to replace that view.

To delete a view, select **View | Delete View**. Select the view to delete and click OK.

To activate a view, select **View** and select the menu item with the view's name. The screen position, overlays, and grid will be changed to reflect that view

Repainting

Occasionally, you may find that while you are editing objects in AutoREALM a pixel or two won't get cleaned up when it should. Although every effort is made to keep stray pixels out of sight, "droppings" can be removed by clicking the repaint button, which will refresh the display.

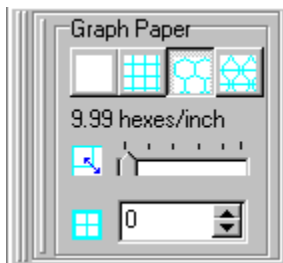
The repaint button is in the General toolbar. 

Creating A New Map

Grids And Colors

Grids

When you start AutoREALM, a blank map is created for you. The default is a square cyan grid background, which you can change to suit your tastes with the Graph Paper Toolbar (shown below). You can also copy the grid settings from another map by opening that map and selecting **File | New** from the menu.




Colors

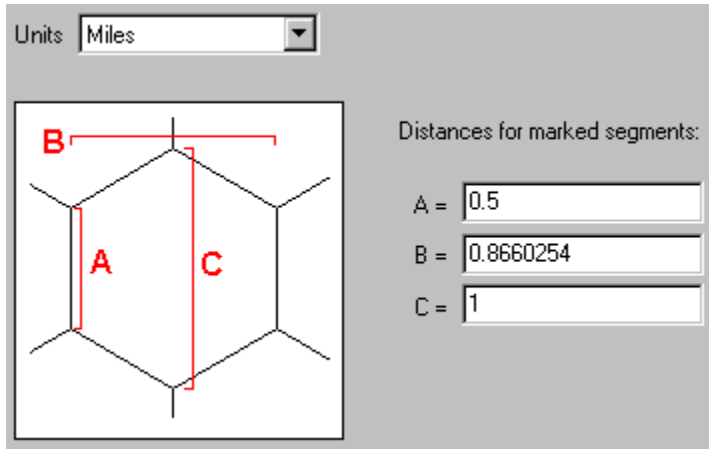
The color toolbar lets you change the colors for the map as a whole and for individual objects. If you hover the mouse cursor over one of the color buttons, AutoREALM will tell you the button's purpose. For any of the color buttons, clicking on the button will open a color palette. Choose the color you want, or pick **Custom** to select a color not on the palette. Some buttons (i.e. fill color and outline color) allow selection of **No Color** if you want that color to be invisible. No color is shown with an "X" (the fourth button from the left in the picture).



Measurements and Units

You can set the measurement scale used by AutoREALM when computing distances with push pins or the ruler tools. To set the scale of your map, use **File | Properties** or press **Alt+Enter** (click on the **Measurement** tab if necessary).

NOTE: To set the scale, you must have a grid displayed on your map (click on any one of the three grid buttons ). The scale settings are relative to the grid being displayed; if your grid is turned off, you will not be able to change distances on your map.



Map Comments

Each map has comments you can use for your own notes. To view or edit the comments of your map, use **File | Properties** or press **Alt+Enter**. Then click on the **Comments** tab). You can use comments for describing:

The original source of your map.

Any special features or conventions you've used.

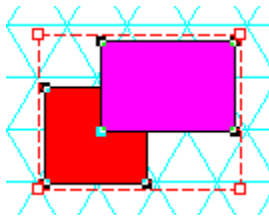
The time or era of the map.


Details that remain to be finished.

The author and/or copyright information.

Basic Map Editing

Using The Selection Tool



The selection tool  is used to select the objects you want to perform any actions on (with the exception of objects in frozen overlays). Selected objects display small black squares called handles on their corners (or on any other points that you can modify). The outer boundary of the selected objects is shown with a dashed red line.

There are several ways to select objects with the selection tool:

To select a single object: Click on the object.

To select all objects within a rectangle: Hold down the left mouse button and drag the mouse over an area on the screen. When you release the mouse, all the objects completely within that region will be selected.

To select the object closest to the cursor: Press **Alt** and click on the map. The object that has the closest handle will be selected. *Note:* Because AutoREALM uses the closest handle and not object edges, an object other than the one you want may be selected. Try clicking near a corner of the desired object.

To cycle through all possible selections in a region: Hold down **Alt** and drag the mouse over an area on the screen. The selection will cycle through any objects intersecting that region. Repeat the process to cycle the selection again. This mode of selection is useful for selecting objects placed behind other objects.

To select more than one set of objects: Hold down the **Ctrl** and **Alt** keys and click to add the closest object, or hold down **Ctrl** while dragging a rectangle over a region. All the previous objects will remain selected and the new objects will be added to the selection. You can also remove objects from a selection by using **Ctrl** and reselecting some of the already selected objects.

To select all objects: Click **Edit | Select All** in the menu.

To select nothing: *When the selection tool is active*, click and release in a blank portion of the map. Or, *at any time*, you can 1) Right-click and select "**Select None**", 2) Click **Edit | Select None** in the menu, or 3) Press the **Esc** key.

Once you have selected some objects, you can do the following operations on the entire selection:

Alter the proportions of the selected area.

Move the mouse cursor over one of the hollow red handles on the selection boundary (the mouse cursor will change into a double-headed black arrow). Click and drag the cursor to change the shape of the selected items. If you want to retain the X/Y proportion of the selected objects, hold down the **Shift** key while dragging the red handle.

Move the selected area.

Move the mouse cursor to one of the edges of the selected area (the mouse cursor will change into a hand). Click and drag the cursor to move all the selected objects.

Alter the object's handles.

Move the mouse cursor over a black handle (the mouse cursor will change into an arrow). Click and drag to move that handle; the effect of moving the handle depends on the object. If more than one handle is on the same point, all of the handles will be moved (if two or more handles are overlapping each other, you may use **Alt** while dragging to separate them).

Many other functions in AutoREALM work on selected objects, like Cut, Copy, Paste and Delete, Move, Rotate, Scale, Flip, Align, and Create Array.

Cut, Copy And Paste

Copy (Ctrl+C)

When one or more objects are selected, you can copy those objects to the clipboard. The objects are copied to the clipboard in a native AutoREALM format (for pasting back into AutoREALM), a bitmap format (for pasting into paint programs), and a metafile format (for pasting into clipart programs).

Cut (Ctrl+X)

Like Cut, copies the selected items to the clipboard, but also removes them from the map.

Paste (Ctrl+V)

Pastes the selected objects into the center of the map. Click on the edge of the red selection border and drag the object to the desired location. (To make a copy of an object a specific distance away, see Create Array.) You can paste from AutoREALM into itself, and you can paste metafiles or bitmaps from other programs into AutoREALM.

Delete (Del)

Removes the selected objects from the map.

Undo and Redo

Undo (Ctrl+Z)

Undoes the last action to the map. The description of the item to be undone is in the Edit menu, and also is displayed if you hover the cursor over the undo button. The number of levels you can undo is controlled in the Settings dialog. Unlike many other programs, saving a file does not erase the undo history. You can still undo to actions that took place before you saved.

Redo (Ctrl+Y)

Redoes the last undo. Like undo, the Edit menu and redo button's hint both display the action that will be redone. The redo history is erased as soon as you make a change to the map (that is, once you add/delete/change an object, you cannot redo a previous action).

Adding Objects

There are many different tools you can use to add objects to your map. Some features common to all object tools are:

Click on the object button to start adding objects of that type, and the mouse cursor changes to reflect the new object. How you actually place the object depends on the number of points required to specify the object. For one point objects (text or icons) add it by clicking on the map. For two point objects (lines, ellipses, rectangles, or polygons) click, drag, and release. For N-point objects (curves, polylines, or polycurves), click once per point.

Many objects come in two varieties: normal and fractal. Use normal objects to represent straight lines, arrows, rulers, and other geometric objects. Fractal objects have rough edges, and are used to represent natural boundaries like lakes, rivers, or coasts.

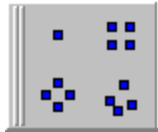
When you add an object, its properties are set by the current toolbars for overlays, colors, style, fractal or icon settings.

Points normally are placed where you click, except if you have one of the two types of snap active. Gravity snap makes a point gravitate to nearby existing points. Grid snap makes a point snap to the nearest grid point.

You can group several objects together to make them easier to manipulate. A group acts like one object.

Holding down **Shift** while drawing lines forces the line segment to the closest 45° angle; while drawing ellipses, rectangles, or polygons, **Shift** forces the shape to have equal width and height.

These four toolbars control adding objects to a map.



Modifying Objects

All methods of modifying objects require you to select the object first. When you select an object many of the toolbars change to reflect the selection. The color toolbar changes to reflect the colors of the selected object; you can use this feature to copy properties from one object to another. The overlay combo box displays the overlay of the object. And if applicable, the line styles, icon settings, fractal settings, and text buttons all change to reflect the selected object. (If more than one object is selected, the changes take place only if the property of all the selected objects is identical.)

After the object (or objects) are selected, you can:

Ø Change an object's shape:

Move the mouse cursor over one of the black handles inside the selection (the mouse cursor will change into a white arrow). Click and drag the cursor to adjust the position of that handle.

Change an object's location:

Move the mouse cursor to an edge of the selection (the mouse cursor will change to a hand). Click and drag the cursor to move the objects.








Change the object's size an arbitrary amount:


Move the mouse cursor over one of the hollow red handles at the corners of the selection (the mouse cursor will change to a diagonal double-headed arrow). Click and drag to resize the object (hold down **Shift** while dragging to keep the object proportional).

Change the object's attributes:

Changing any of the properties on the color, overlay, fractal settings, icon settings, line styles, or font attributes toolbars while objects are selected will change that property of all the selected objects.



Change the object's size or orientation by a specific amount:

Click on ,  or the rotate  button to rotate any amount. Click on the scale  button to enlarge or shrink the object, or the move  button to move it. Finally you can flip  or skew  the object.

Ø **Add or delete points on a polyline or polycurve:** Select the scalpel  tool.

Ø **Split a polyline or polycurve into two:** Select the scalpel  tool.

Ø **Join two or more objects together:** Select the glue  tool.

Ø **Group (or ungroup) two or more objects together:** Click on group  or ungroup .

Measuring Distances

AutoREALM provides several ways to measure distances. The main units of distance for the map control the physical scale of the map. You can make measurements using any available unit by right-clicking, choosing **Change Unit**, and selecting the unit you want.

Straight Ruler

After selecting this ruler, click and drag to measure the distance along a straight line.

Measurement String

After selecting this ruler, draw along the map to determine the distance of a non-linear route.

Pushpins

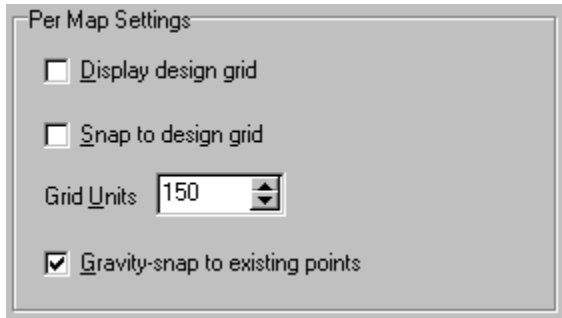
To measure the distance between the cursor and up to four other points, stick a push pin in the map by right-clicking, choosing **Place Pushpin**, and selecting a color. The pushpin toolbar will show the distance and angle between the cursor and all the active pushpins.

Grid



Finally, the obvious (and crudest) method is the Grid method. Just count the number of squares in a straight line between two points and multiply by the number of units you've set per square.

Snap Grid And Gravity


AutoREALM provides two types of "snaps" to help you align objects. You can set snap related options in the map properties dialog or by the settings toolbar. To get to the snap options (shown below), press **Alt+Enter**, and click the **Grid & Snap** tab.



Grid

You can superimpose a grid of points over the map, which is especially useful if you are designing a "traditional" dungeon. If **Snap to design grid** is checked ( is pressed), all points that you add afterwards will be snapped to the nearest grid point. The size of the grid is controlled by the **Grid Units** spin edit in the dialog above. You can choose to snap to the grid but leave the grid display off by clearing the **Display design grid** checkbox (or button ). You can enable or disable the grid quickly (even in the middle of adding objects) by pressing **Ctrl+S**.

Gravity

If gravity snap is enabled ( is pressed), new points will snap to any nearby points already on the map. This makes joining object endpoints or exact alignment to existing objects easier. You can enable or disable gravity snap quickly (even in the middle of adding objects) by pressing **Ctrl+G**.

Aligning Objects

AutoREALM provides the following tools to help you align objects on your map:

Alignment Tool

Allows you to order selected objects by edges or centers, spaced or packed.

Grids

Using the snap grid, you can space objects evenly, and make sure lines are exactly horizontal or vertical.

Create Array

Create an equally spaced array of objects with Create Array.

Icon Placement

You can make a "spray" of icons in a square or diamond pattern.

Orthogonal Lines

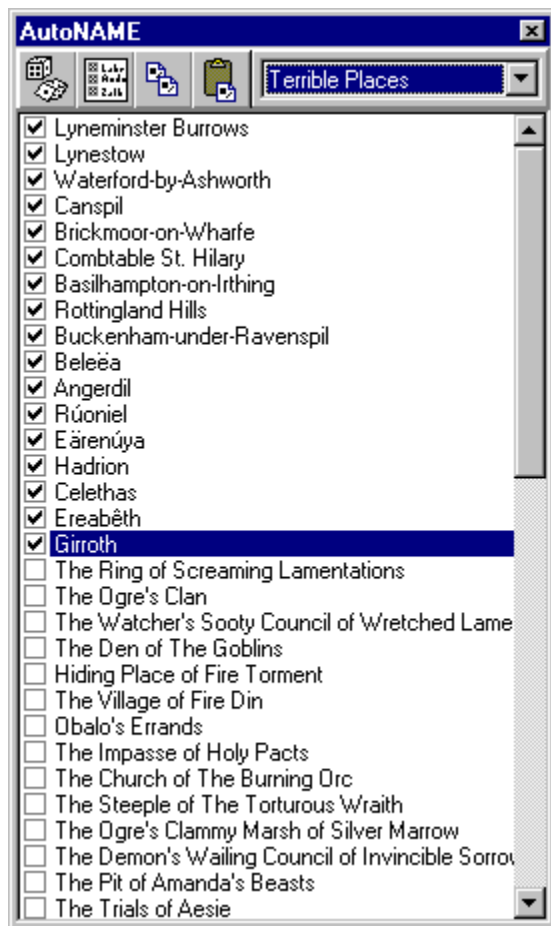
Holding down **Shift** while adding lines forces the line segment to the nearest 45 angle.


Map Properties


Each map has the following properties: Measurement scale, Comments, and Grid/Snap options. You can access the map properties by the **File | Properties** menu selection, or by pressing **Alt+Enter**.


Auto Name


AutoNAME is a feature that allows you to quickly and easily generate and place random names on your map. To use AutoNAME, select **Options | AutoNAME** from the menu. This will bring up the AutoNAME dialog. From there...



Click  to generate new names. Any names that you've checked will stay in the list the next time you generate names.

Click  to save all names by checking them, or to clear all checked names.

Click  to copy all checked names to the clipboard for editing in another program.

Click  to paste text from the clipboard into AutoNAME.

Double-click on a name to copy the name into the text toolbar. The text tool will automatically be selected. Then just click on the map to place the name.

Select a new rule file with the combo box at the top to generate a different style of names. (You can even make your own rule files.)

Toolbars

Overview

AutoREALM has many different toolbars, but they all share some basic features.

Hovering the mouse over any button for a second or two will pop up a hint with the button's name.

The Toolbar menu allows you to quickly remove or restore an individual toolbar. Checkmarks are displayed by the visible toolbars.

You can tear a toolbar off the edge of the window by clicking on the double raised bar along the left edge of a toolbar, dragging the toolbar away from that edge, and releasing the mouse button. This will make the toolbar "float" above the desktop, instead of "docked" along the window edge, and the toolbar will be given a title bar and close box.

You can redock a floating toolbar by clicking on the title bar, dragging it to a window edge, and releasing the mouse button.

You can change the shape of a toolbar. Undock it by dragging it by the double raised bar out into the open. Then adjust the width and height of the toolbar by dragging the lower-right corner of the toolbar. You can then redock the toolbar by dragging it by the titlebar back to the appropriate edge.

To move a toolbar from one edge of the screen to another, undock it first, then redock it on the new edge.

You can reorder the toolbars to your preferences, and they will be restored to your layout the next time you start AutoREALM.

If you have messed up the toolbar layout beyond recognition, you can restore the AutoREALM default layout by selecting **Toolbar | Restore Default Toolbars**.

Color



The color toolbar lets you change the colors for the map as a whole and for individual objects. If you hover the mouse cursor over one of the color buttons, AutoREALM will tell you the button's purpose. For any of the color buttons, clicking on the button will open a color palette. Choose the color you want, or pick **Custom** to select a color not on the palette. Some buttons (i.e. fill color and outline color) allow selection of **No Color** if you want that color to be invisible. No color is shown with an "X" (the fourth button from the left in the picture).

When you select an object, the color buttons change to reflect that object's colors. New objects are added with the current button colors. And if you change the color buttons while objects are selected, those objects will be changed to the new colors.

From left to right, the buttons are:

Main Color The color of lines, icons, and text. The outline color of a filled region.

Fill Color The color of filled regions. To fill a region, right-click while adding a polyline or polycurve, and select **Create Closed Figure**, or select a polyline or polycurve and choose **Transform | Close Selected Figures** from the menu. If set to **No Color**, a closed area will not be filled.

Fill Pattern The fill pattern for a filled region. The two colors used in the pattern are the Main color and the Fill color.

Text Outline Color The outline color for text or icons. If set to **No Color**, the text will not have an outline.

Background Color The map's background color.

Grid Color The grid line color.

Line Style



The color toolbar lets you change the colors for the map as a whole and for individual objects. If you hover the mouse cursor over one of the color buttons, AutoREALM will tell you the button's purpose. For any of the color buttons, clicking on the button will open a color palette. Choose the color you want, or pick **Custom** to select a color not on the palette. Some buttons (i.e. fill color and outline color) allow selection of **No Color** if you want that color to be invisible. No color is shown with an "X" (the fourth button from the left in the picture).

When you select an object, the color buttons change to reflect that object's colors. New objects are added with the current button colors. And if you change the color buttons while objects are selected, those objects will be changed to the new colors.

From left to right, the buttons are:

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Transform | Close Selected Figures from the menu. If set to **No Color**, a closed area will not be filled.

Fill Pattern The fill pattern for a filled region. The two colors used in the pattern are the Main color and the Fill color.

Text Outline Color The outline color for text or icons. If set to **No Color**, the text will not have an outline.

Background Color The map's background color.

Grid Color The grid line color.

Drawing (Drawing, Fractal Drawing, Fractal Settings)

Drawing



The Drawing toolbar has most basic objects you can add to a map. Select the colors and line styles you want before you start drawing. From left to right, the buttons are:



Freehand Draw a freehand line. Click, draw on the map, and release to finish the line. To create a closed shape that can be filled, right-click *before* you release the left mouse button, and choose **Create Closed Figure**.



Line Draw a single segment line. Click, drag the line as desired, and release to end the line. Lines cannot be filled.



Polyline Draw a multiple segment line. Click and release the left mouse button for each point of the line, or press **Backspace** to remove a point already placed.. To finish the line, press **Esc** or right click and choose **Create Open Figure**. To create a closed shape that can be filled, right-click and choose **Create Closed Figure**.



Curve Draw a Bezier curve. Click once to set the start point. Click again to set the end point. Click two more times to set the control points, which alter the shape of the line. Press **Backspace** to remove a point already placed. The mouse cursor changes to give you a hint as to which point is required next. Curves cannot be filled.



Polycurve Draw multiple attached Bezier curves. Follow the instructions for a curve, except each curve after the first will already have the first point specified (the end of the last curve). As in a curve, the mouse cursor changes to give you a hint as to which point is required next, and you can press **Backspace** to remove a point already placed. To finish the polycurve, press **Esc** or

right click and choose **Create Open Figure**. To create a closed shape that can be filled, right-click and choose **Create Closed Figure**.

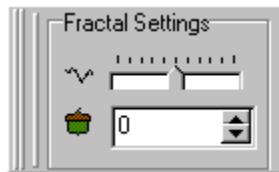
Note: If you are using the speed method for line termination, the directions are slightly different: Right-clicking finishes an object, and to create a closed figure, hold down the **Shift** key before Right-clicking.

Fractal Drawing




A complementary set of tools exists for fractal objects. Fractal objects act the same as their normal counterparts, but they have two additional settings (shown below). To add fractal objects, follow the instructions given above for normal objects.


Fractal Settings



These two settings control the appearance of fractal objects.

When you select an object, the fractal controls change to reflect that object's fractal characteristics. New objects are added with the displayed fractal settings. If you change the fractal controls while objects are selected, those objects will be changed to the new settings.

 **Roughness slider** The amount of fractal "depth" for a line. At the far left of the scale, a fractal object will appear as smooth as a normal line or curve. At the far right of the scale, the object is so ragged that it barely conforms to the original line. The middle position is the default, and gives a generally useful appearance.

 **Seed** The seed is a number from 0 to 65535 that defines a fractal's appearance. The shape of two fractals with identical seeds will be the same. You don't need to change the seed if you don't want to: the seed is automatically incremented by AutoREALM as you place fractal objects. If you want to, you can adjust the seed to try to match a fractal with a desired shape, or to generate special effects by using several fractals with the same seed.

Editing



The Editing toolbar contains many of the primary editing tools. Listed in order, they are:



Send to Back Places an object behind other overlapping objects.



Bring to Front Brings an object in front of other overlapping objects.



Paste Pastes an object or objects from the clipboard.



Copy Copies selected objects to the clipboard.



Cut Copies selected objects to the clipboard and deletes them.



Erase Deletes selected objects.



Scalpel Can add or delete vertices, and can separate one line into multiple lines.



Glue Used to permanently attach two objects together. Click on the glue tool. Hover over an endpoint of an object you wish to attach, and the glue bottle will turn black. Now, click and drag that endpoint to the endpoint of a different object. Release the mouse, and the two objects will be joined together.

General



The General toolbar contains some of the functions you will probably use most in AutoREALM.



Selection Used to select objects; selected objects are used in many AutoREALM commands.



Zoom Zooms in (left click), zooms out (right click), or zooms to a particular area (click and drag a zoom rectangle).



Pan Used to navigate around the map; click and drag to pan the map in the direction of the cursor movement.



Ruler Measure map distances by clicking and dragging to find the distance of the line. Right click and choose **Change Units** to use a different unit.



String Measure map distances by drawing a route. Right click and choose **Change Units** to use a different unit.



Save Save the current map.



Repaint Draws the map again.

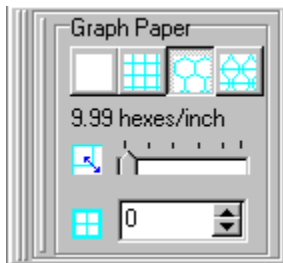


Undo Undoes the last action. Hovering the mouse over the undo button will display the action that will be undone.



Redo Redoes the last undone action. Hovering the mouse over the redo button will display the action that will be redone.

Graph Paper



Controls the graphing background for your map. You can select between square, hexagonal, and triangular grids, or none at all. Other options allow you to select the size of the grid, and whether or not to use bold lines on selected multiples of the grid spacing.


Icons (Icon Pages, Settings, Placement)


AutoREALM has a large assortment of icons, or symbols, which can be placed on a map. There are three toolbars that control adding icons to your map.


Icon Placement




These tools control how icons are placed on the map. The actual icon placed is selected with the Icon Pages, below. The size of each icon is set via the Icon Settings toolbar. For Square Array, Diamond Array, and Random, the spread between multiple icons is also set in the Icon Settings toolbar.

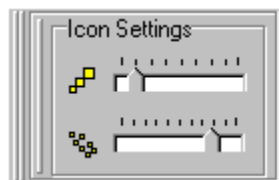
 **Single** Each click of the mouse puts one icon on the map.

 **Square Array** Hold down the mouse button and draw to place multiple icons in a square pattern (orchards, grids, etc.).

 **Diamond Array** Hold down the mouse button and draw to place multiple icons in a diamond pattern (fields, marshes, etc.).


 **Random** Hold down the mouse button and draw to place icons randomly (mountains, etc.).


Icon Settings



These tools control the size and spread of icons.

When you select an object, the icon size slider (but not the spread) changes to reflect that object's size. New objects are added with the current icon size. And if you change the icon size slider while objects are selected, those objects will be changed to the new size.

 **Size** Controls the size of the icon. AutoREALM uses two different ways to express icon sizes, which can be changed in Settings. To change items already placed on the map, select them first, then change the icon size slider.

 **Spread** For tools that place more than one icon, this slider changes the distance between icons (the spread). You cannot change the spread between icons once they have been placed; delete the icon group, and re-add it.

Icon Pages



Select the icon to be placed using the Icon Pages toolbar. The icons are grouped into several pages. You can use the left and right scroll at the upper right corner of the toolbar to see more pages. There may be more icons than can fit on each page. Scroll through the icons on that page with the small arrows along the edges of the icons.

Overlay

The overlay bar controls all aspects of overlay use.



Active Overlay

Using the **Active Overlay**, you can:

Change the overlay of new and selected objects by dropping down the list and selecting a new overlay.

Add a new overlay by clicking the active overlay text, typing in a new name and pressing **Enter**.

Overlay List

When you select an object, the active overlay changes to reflect that object's overlay. New objects are added with the displayed overlay. And if you change the active overlay while objects are selected, those objects will be moved to the new overlay.

Using the **Overlay List**, you can:

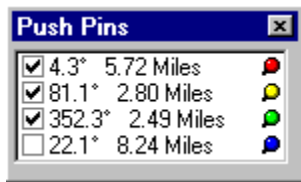
View if an overlay contains any objects. If an overlay is populated, it will have a small symbol or small colored square to the right of the overlay's name. Empty overlays have nothing next to their name.

Hide, show, or freeze objects in an overlay, by clicking on the checkbox next to the overlay name. If the checkbox is empty, the overlay is hidden. A checked overlay is visible and editable. A gray checked overlay is visible, but cannot be edited.

Delete an overlay by selecting and pressing **Ctrl+Del**. You will be prompted for what to do with items already in that overlay.

Change the active overlay by double-clicking on the name portion of an overlay in the list.

Push Pin



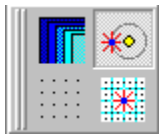
The push pin toolbar displays the status of any push pins you have placed on the map. There are four push pins available for you to measure distances and angles between selected points and the cursor.

To place a push pin on the map, move the cursor to the desired location, and click the right mouse button. Choose **Place Push Pin**, and pick a color. That push pin will be stuck into the map at that point.

The distance and angle (in tenths of a degree) between the cursor and the pushpin will be displayed at all times. To change the units of distance, right-click and choose **Change Units**.

You can temporarily hide a push pin by clicking its checkbox off. Redisplay it by clicking the checkbox on.

Settings



The settings toolbar gives you quick access to four very commonly used settings. Each button is a toggle, and will display as depressed if it is currently active.

Overlay Display When pressed, objects display specially to allow you to easily see overlays. There are two choices for display, settable in general settings. You can choose between displaying overlay icons next to each object, but the objects retain their normal color. Or if you prefer, objects are displayed different colors depending on the overlay they are in. You can toggle this option back and forth to verify that you are using the overlays as you intended.



Gravity Snap When pressed, adding lines, icons, curves or any other object are snapped to nearby points already on the map. The green LED lights up when this snap is active. See Map Settings for more details.



Display Grid When pressed, a grid is displayed for convenience in design. Activating this button automatically activates the Snap to Grid feature. See Map Settings for more details.



Snap To Grid When pressed, adding lines, icons, curves or any other object are snapped to the closest grid point. The green LED lights up when this snap is active. See Map Settings for more details.

Shape



The shape toolbar gives you access to more complex shapes and commands for manipulating them.



Rectangle/Square Click and drag to create a rectangle. The rectangle will be filled unless the fill color is set to None (shown as an **X**). Hold down **Shift** while dragging to make a square.



Ellipse/Circle Click and drag to create an ellipse. The ellipse will be filled unless the fill color is set to None (shown as an **X**). Hold down **Shift** while dragging to make a circle.



Polygon Click on the polygon tool and enter the number of sides. Then click and drag to create a polygon. The polygon will be filled unless the fill color is set to None (shown as an **X**). Hold down **Shift** while dragging to make an equilateral polygon. To change the number of sides, click the Polygon button again.



Rosette Click on the rosette tool to add a rosette chart as often seen on old maps. Select the number of points and clipping options. Then click and drag to make the rosette. If you have selected a clipping rectangle, click and drag again to set the clipping rectangle.



Text Click on the text tool, and the text toolbar will appear. Select options as necessary and type in the text. Click on the map to place the text.



Curved Text For text that follows a curve (e.g. political boundaries or rivers). Click on the curved text tool, and the text toolbar will appear. Select options as necessary and type in the text. Click four times on the map to set the beginning, ending, and two control points for the curve. The text will be fitted to the red guideline.



Group Group objects together: grouped objects are treated as a single object. Select the items to be grouped and click the Group button.



Ungroup Ungroup an existing group to allow editing of objects individually. Select the group (or groups) and click Ungroup.



Decompose Converts a complex object into simpler objects. Decompose works on icons, text, curved text, polylines, curves, and fractals. Select the objects to be decomposed and click Decompose.

Text



The text toolbar allows you to set the font name, font size and attributes of text. For multiple lines of text you can choose left, right, or center justification. At the bottom is the editing window for the actual text. Type in the text using the standard editing keys, and use **Enter** for multiple lines of text. To make a list of randomly generated names you can insert into your map, see AutoNAME.

When you select an object, the text buttons change to reflect that object's text, font and text attributes. New objects are added with the displayed font attributes. And if you change the text buttons while objects are selected, those objects will be changed to the new properties.

Transform



The transform toolbar contains operations for scaling, moving, aligning, rotating, or flipping objects. Almost any operation can be performed on any object, except skew or asymmetrical scaling on icons or text. (Hint: You can decompose the icons or text first for effects like this.)



Align Aligns all the selected objects in several different ways.



Flip Flips the selected objects horizontally or vertically.



Skew Skews selected objects horizontally or vertically.



Rotate Rotates the selected objects.



Scale Enlarges or reduces the selected objects horizontally, vertically or both.



Rotate 90° Rotates the selected objects 90 degrees.




Rotate 45° Rotates the selected objects 45 degrees.

Using Overlays

Effective Overlay Use

Overlays are different layers of your drawing that can be selectively viewed or hidden. They can make producing several variants of the same map very easy. You can think about them as computer controlled transparencies. All actions with overlays are controlled by the overlay toolbar.

Every view that you create preserves the state of visible and frozen overlays. You can make multiple views to easily switch back and forth between multiple sets of overlays that you commonly enable together.

Every object you add to a map belongs to an overlay. Hiding an overlay hides every object belonging to the overlay, and the same with viewing an overlay. Although you cannot normally see what overlay an object belongs to, the settings toolbar has a button () for quick toggling of an overlay display mode. There are two methods of displaying the overlay, which you can set to your preference.

Some ways you can use overlays to your advantage:

- For very simple maps that you only will view in one way, don't mess with overlays at all. By default all objects will go into the Design overlay.
- For a dungeon, you may only need two overlays: one for what the players see and one for the D.M.
- For maps that you want to present in stages, use a new overlay for each stage. As the players gain more information, they can be presented a new map with more overlays visible to mark their newfound knowledge.
- In the landscaping example there is an overlay for future additions so you can easily switch back and forth between the current layout and future plan.
- Dungeons with multiple levels may benefit from making each level an overlay. If the dungeon has lots of vertical features that link levels together, putting each level on an overlay lets you line up the map features properly.
- You can draw drafting aids on an overlay and freeze that overlay. For example, you may have a group of features in a circle; draw the circle on an overlay, freeze the overlay, and draw the remaining features over it.
- If you have access to a laser and color printer, you may find that some features don't reproduce well on one or the other. Place features for a specific printer on different overlays. Topographic coloring may only look good on a color printer, whereas complex drawings may only show well on a laser printer.

Modifying Overlays

Although AutoREALM starts with a default set of overlays, you can delete or add overlays to your liking. Delete an overlay by clicking on it in the overlay list and pressing **Ctrl+Del**. Add a new overlay by typing a new name into the active overlay and pressing **Enter**.

AutoREALM does not have an automatic way to rename an overlay. You can achieve the same effect by following these steps. Adding an overlay with the new name. Select the overlay to rename in the overlay list and press **Ctrl+Del** to delete it. You will be prompted to remove objects in the overlay. Click **No**. You will then be prompted for the overlay that the objects should be moved to. Select the overlay with the new name.

Moving Objects Between Overlays

There are three actions that move objects from one overlay to another.

- When an item is selected, the active overlay combo box in the overlay toolbar will display that item's overlay. (If you select objects in different overlays, the active overlay does not change.) Changing the active overlay when any items are selected will move the objects to a new overlay.
- Groups can only consist of objects in the same overlay. If you group objects from different overlays together, those objects will be moved to the overlay that contains the group. Ungrouping the objects doesn't restore the objects to their original overlays, but Undo will.
- When you delete an overlay, you can choose to remove all objects in the overlay or move them to another existing overlay.

Frozen Overlays


Frozen overlays are visible but cannot be modified. You can use frozen overlays to "fix" certain features on a map that you are finished working on so you don't accidentally alter them. Or you can add features to an overlay and freeze it to provide background art or alignment guides. To freeze an overlay, click on the overlay's check box until it appears as a gray shaded checkmark.

Although frozen overlays are visible, you cannot select items in them. You may get frustrated trying to select objects that do not seem to want to be selected. If you attempt to select objects in a frozen overlay, AutoREALM will warn you that you are trying to select frozen objects. The frozen overlay in question is displayed so you can unfreeze that overlay if you are trying to modify something.

Frozen overlays do not interact with the editing process in any way *except* one. Points in a frozen overlay can still be snapped to with gravity snap. This allows you to make a template pattern, freeze it, and use the pattern to guide placement of objects in a different overlay. Gravity snap does not apply for objects in hidden overlays.

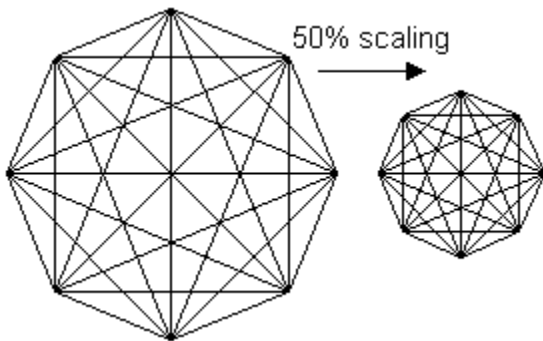
Transformation Tools

Scale




Scale  allows you to change the size of selected features. You can select **Uniform Scaling** to scale equal amounts horizontally and vertically, or **Asymmetric Scaling** to scale different amounts.

A scaling of 100% means leave the items unchanged. Scaling 50% means shrink the items in half. Scaling 200% means double the size of the items.

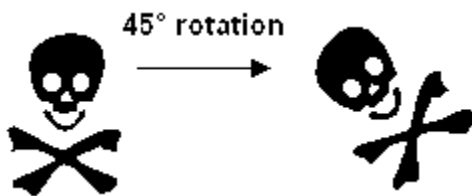
Text and icons cannot be scaled asymmetrically without decomposing them first.




Rotate

Rotate  allows you to change the orientation of selected features. Enter a positive number of degrees for counter-clockwise rotation, and a negative number for clockwise rotation. Since there are 360° in a circle, 90° means rotate one-quarter turn, 180° means rotate one-half turn, and 270° means rotate three-quarters turn. There are two shortcut buttons for  90° rotation and  45° rotation.

To rotate 180°, clicking the 90° button twice is usually easier than typing 180 in the rotate dialog box. Note that rotating an object 180° is different from flipping it.

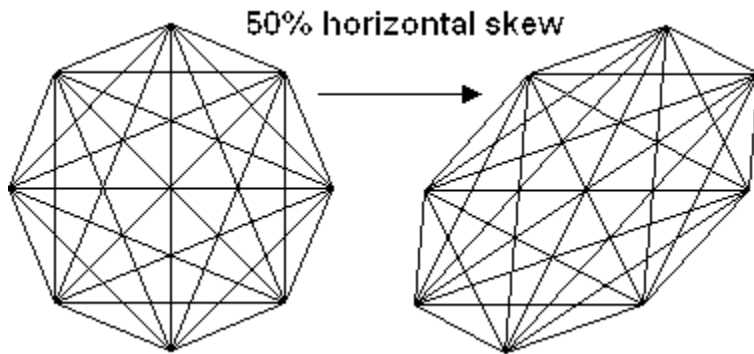


Skew


Skew  slides one or both axes a varying amount. Horizontal skewing is similar to *italicizing*.

A skew of 0% means leave that axis unchanged. Skewing 100% will make the objects twice as wide (or tall). Negative skew values reverse the direction of the skew.

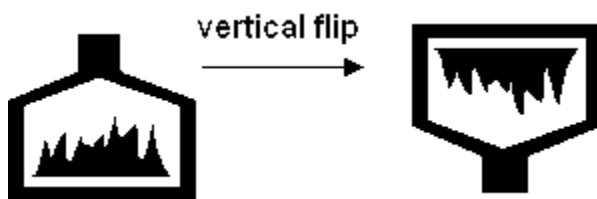
Text and icons cannot be skewed without decomposing them first.




Flip

Flip  allows you to exchange the top and bottom (vertical flip) or left and right (horizontal flip) sides of an object.

Text and icons cannot be flipped without decomposing them first.




Move

Move  allows you move selected features an exact amount. You can move features an approximate amount by clicking on the red selection border and dragging.

Select **Cartesian** to move an object a specific amount horizontally and vertically. Use negative numbers to move left or up and positive numbers to move right or down. The numbers are expressed in the units at the bottom of the dialog.

Select **Polar** to move an object by degrees and distance. Use positive degrees for counter-clockwise rotation, or negative degrees for clockwise rotation. The distance is expressed in the units at the bottom of the dialog.

Decompose


Decompose () is a powerful operation that converts an object into simpler pieces. Decompose is useful for editing portions of an object that you would not normally be able to edit. For example, you could add text for "Hi", decompose the text, and delete the dot off the "i". *Once an object is decomposed, you cannot convert the decomposed pieces back to the original object, except by **Undoing** the decompose.*

Decompose converts every selected object into its next simplest representation, as shown by the table. Repeated decomposes will eventually turn the selected object into a set of lines. A line is an atomic object and cannot be decomposed.

Object Type	Decompose Action
Icon*, Text *	Converts into a series of filled polygons. The "hollow" parts of letters or icons will be overlapping polygons filled with the map background color.
Curved Text	Separates each letter into a different piece of text.
Curve*, Fractal	Converted into a polyline.
Curve*, Fractal Line *	
Polyline	Separates each component line into a distinct line segment.
Fractal Polyline	Converts into a series of fractal lines.
Polycurve	Separates each component curve into a distinct curve.
Fractal Polycurve	Separates each component fractal curve into a distinct fractal curve.
Group	Ungroups.
Line	None.





** The display size of the symbols when decomposed influences the resolution of the conversion. For a more accurate shape, zoom in closer before decomposing. For fewer points and less accuracy, zoom out before decomposing.*

Glue


Glue () is similar to grouping, but it joins two objects into one. Glue can be used to create a filled region that has curved, fractal, and straight segments by gluing together three different objects. It can also be used to extend a line by adding on new pieces, or to reconstruct a line after decomposing.

Only objects that have an endpoint can be glued. Text, symbols, circles, squares, polygons, or closed polylines cannot be glued, but lines, open polylines, curves, open polycurves, and fractal versions of each can be glued. Because the objects being glued are merged together, they do not retain individual characteristics after being glued. The final object retains the color, line style, and overlay of the second glued object.


To glue two lines together, follow these steps:

- Select the glue tool. As you move the glue cursor , all candidate objects underneath the cursor will highlight.
- Move the cursor over the first line's endpoint. The glue bottle turns black  to indicate this is a valid starting point.
- Click and hold down the mouse button. The glue bottle tips  to show you have started the gluing process.
- Drag the cursor over the second line's endpoint. The glue bottle will again turn black  as it passes over an endpoint. Release the mouse button while the cursor is still black, and the two endpoints will be glued together.


Scalpel

The scalpel tool () is used to edit objects already on the map. It can delete vertices of a polyline, separate a polyline into two pieces, or add additional vertices to a polyline.

To Delete a Vertex

Hover over a vertex on a polyline and the cursor will change to . Click the left mouse button to remove that vertex from the line.



To Separate a Line Into Two Lines

Hover over a vertex on a polyline while holding down **Ctrl**, and the cursor will change to . Click the left mouse button to break the line into two portions.

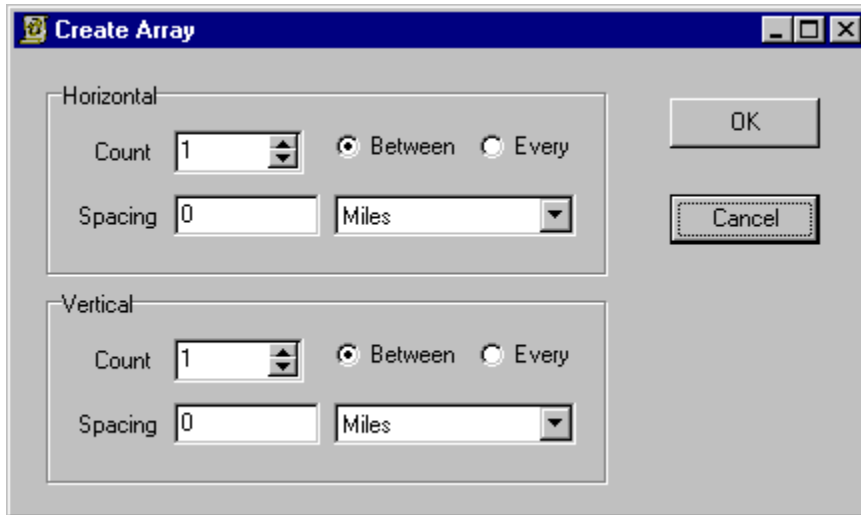
To Add Vertices

Click and drag the scalpel, and a red line will appear. Drag the red line over some objects. Release the mouse and those objects will have additional vertices added where they intersect the line.

Send to Back / Bring to Front

Send to Back  and Bring to Front  change the order of selected objects relative to the rest of the map. Send to Back causes an object to be drawn first, so that all other overlapping objects will be drawn on top of it. Bring to Front causes an object to be drawn last, so that it is drawn on top of any other overlapping objects.

Create Array



Create Array allows you to create copies of a selected set of objects at regular intervals. Horizontal specifies parameters for creating the columns of the array, and vertical specifies the rows. Select the objects to copy first, then pick **Transform | Create Array** from the menu.


Count Number of objects in each column/row. Using a horizontal and vertical count both equal to one will not create any extra objects.

Between If set, the *spacing* is the distance between each column/row of objects. For example, using 0 spacing and *Between*, two objects will be created side-by-side.

Every If set, a column/row of objects is created every *spacing* units. For example, using 0 spacing and *Every*, two objects will be created on top of each other.

Spacing Distance and units for placing each column/row.

Alignment

Alignment lets you accurately place objects with relation to each other. Select the objects you want to align first, then choose **Transform | Align** or click the Align button . You can align selected objects horizontally, vertically, or both depending on your selections. You can also affect objects widths and heights using the Alignment tool.

Note: For some of these functions, you must have at least one of the objects "out of place" to indicate the amount of deviation. For example, to use the Horizontal Jog function with a vertical array of objects, slide the top one a little to the left. The amount that you slide the object is the offset that will be applied to the remainder of the group. If all the objects are perfectly aligned vertically, the function will not appear to do anything.

No Change No changes are made to the object horizontally or vertically.

Align Left/Top All the objects are aligned so their left sides/tops coincide with the leftmost/uppermost object.

Align Center All objects are aligned so their centers are all aligned on the same horizontal or vertical line.

Align Right/Bottom All the objects are aligned so their right sides/bottoms coincide with the rightmost/lowermost object.

Slant Left/Up The objects are moved so they slant horizontally/vertically the given direction. *Note: This function will not work if the objects are already aligned in the given axis.*

Slant Right/Down The objects are moved so they slant horizontally/vertically the given direction. *Note: This function will not work if the objects are already aligned in the given axis.*

Scatter The objects are distributed randomly along the given axis. *Note: This function will not work if the objects are already aligned in the given axis.*

Jog The objects are jogged in/out (or up/down, or wide/narrow, etc.) every other object. *Note: This function will not work if the objects are already aligned in the given axis.*

Space Equally All objects are distributed equal distances along the given axis.

Stack All objects are placed adjacent to each other along the given axis.

Narrowest/Shortest The objects are all resized to the smallest width/height of the group.

Average The objects are all resized to the average width/height of the group.

Widest/Tallest The objects are all resized to the largest width/height of the group.

Increasing The objects are all resized in increasing widths/heights. *Note: This function will not work if the objects are already the same size.*

Decreasing The objects are all resized in decreasing widths/heights. *Note: This function will not work if the objects are already the same size.*

Close Selected Figures

Transform | Close Selected Figures closes open polylines or polycurves (i.e. the last point of the object is dragged over the first point of the object). This allows them to be filled. You can achieve the same effect manually by dragging the handle of one of the endpoints of the line over the other endpoint, but this function can be more convenient.

Reverse Line Direction

Transform | Reverse Line Direction does exactly what it says for any object built out of lines or curves.

This is useful to flip the orientation of complex line styles; you may have a patterned line that is on the inside of the box. *Reverse Line Direction* will change the pattern to the outside of the box.

You can flip the appearance of a fractal; the fractal will be mirrored on the opposite side of the line after *Reverse Line Direction*.


Finally, you can exchange line tips. A line with a tail and head will point the opposite direction after *Reverse Line Direction*.

Types of Objects


Lines and Polylines

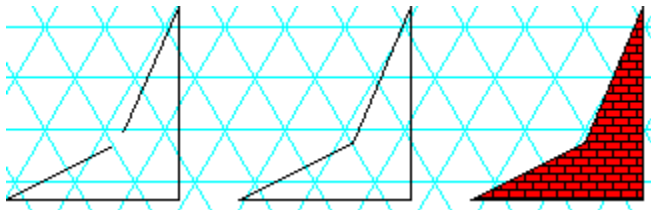
Lines and polylines are basic objects that consist of one or more straight line segments.

Lines

A line is a single line segment, and has a color, a line style, and line endpoint styles, and belongs to an overlay. To draw a line, select the line tool . Then for each line you wish to draw, click the left mouse button at one endpoint, hold down the button while drawing to the other endpoint, and release the mouse.

Polylines

Polylines are lines with multiple segments. A polyline has all the properties of a line, and may also have a fill color and pattern. To create a polyline, select the polyline tool . Click on the first and each successive point of the polyline. When you are finished, right-click and choose **Create Open Figure** or **Create Closed Figure**. You can use **Backspace** to remove the last point you've placed of a polyline before you've finished it.



Polylines come in three flavors. Open (far left) polylines are just like multiple segment lines. Closed polylines can either have a fill color and pattern (right) or can be empty (middle), depending on the Fill Color button. Click the second button on the color toolbar and choose **No Color** for empty; otherwise, choose the color you want to fill with. Click the third button on the color toolbar to set the fill pattern. The Fill Pattern (in this case bricks) will be a combination of the main color (black) and the fill color (red).


Whereas open figures have an arbitrary starting and ending point, in closed figures, the start and end points coincide.

While a polyline is selected, there are two additional actions that other objects do not have. You can use **Alt** while dragging a handle to create an additional vertex at that point (similar to the Scalpel tool). And you can remove a vertex by dragging its handle over an adjacent handle (like the delete function of the Scalpel).


Curves

Curves in AutoREALM are Bezier curves, and consist of four points: two endpoints and two control points. The endpoints define where the curve starts and stops. The control points alter the shape of the curve: the further away the control point, the more severe the curvature.

Curves



A curve is a single curved section, and has a color, a line style, and line endpoint styles, and belongs to an overlay. To draw a curve, select the curve tool . Then click once for the beginning point, the ending point, the first control point, and the second control point. The cursor changes as you place points to give you a hint as to the next point required. You can use the **Backspace** key to remove the last point you placed.

Polycurves

Polycurves are curves with multiple sections. The starting point of each new curve section is the end point of the last curve section. Start a polycurve by choosing the polycurve tool . Then create each section as you would a curve, except you do not need to specify a starting point for additional sections. To end a polycurve, right-click and choose **Create Open Figure** or **Create Closed Figure**.

Like polylines, polycurves may be filled. A polycurve must be closed to be filled. That is, the starting and ending point must coincide. Use the second and third buttons on the color toolbar to specify fill color and fill pattern.

Groups


Groups are a collection of objects that are treated as one object. Objects in a group cannot be individually modified. To group objects together, select the objects and click the group button . To allow individual modification of objects in a group, you must first ungroup  them.

Groups have the following properties:


- Ø A group can contain any other objects, including other groups.
- Ø A group can contain any number of objects, including one. Grouping a single object can be beneficial if that object is complex or has many handles, since it hides the handles and makes the object less likely to be accidentally modified. Some objects can be auto-grouped when created.
- Ø A group is only in one overlay. Grouping objects in different overlays will place them in the same overlay as the group.

Squares, Circles, Polygons


Squares and Rectangles

Squares and rectangles are created with the rectangle tool. Start by clicking the rectangle tool . Click at one edge of the rectangle, drag to the other edge and release to create a rectangle. To create a square, hold down **Shift** while creating the rectangle. If you want the rectangle filled, select a fill color from the color toolbar before you start. Or, click the fill color button and select **No Color** to leave the rectangle hollow. Squares and rectangles are constructed with a polyline, and can be edited just like a polyline (depending on your selection settings, you may have to Ungroup a rectangle before it can be edited).






Circles and Ellipses

Circles and ellipses are created with the circle tool. Start by clicking the circle tool . Click in the center of the ellipse, drag to the outer edge, and release. To create a circle, hold down **Shift** while creating the ellipse. If you want the ellipse filled, select a fill color from the color toolbar before you start. Or, click the fill color button and select **No Color** to leave the ellipse hollow. Circles and ellipses are constructed with a polycurve, and can be edited just like a polycurve (depending on your selection settings, you may have to Ungroup an ellipse before it can be edited).

Polygons

Polygons are created with the polygon tool. Start by clicking the polygon tool . Type in the number of sides for your polygon and press **Enter**. Click in the center of the polygon, drag to an outer edge and release to create a polygon. If you want the polygon to be equilateral (all the sides having equal length), hold down **Shift** while creating the polygon. To start making polygons with a different number of sides, just click on the polygon tool (even when already selected) and you will be prompted for the number of sides again.. If you want the polygon filled, select a fill color from the color toolbar before you start. Or, click the fill color button and select **No Color** to leave the polygon hollow. Polygons are constructed with a polyline, and can be edited just like a polyline.

Fractal Objects

AutoREALM uses fractals to represent rivers, coastlines, or other natural boundaries, since they have a ragged complex appearance. There are fractal equivalents of each of the main objects (Fractal Freehand , Fractal Line , Fractal Polyline , Fractal Curve , and Fractal Polycurve ).

Fractal objects have all the same properties as their equivalent standard objects: they have a color, line style, line ends, fill color and pattern, and belong to an overlay. They also have two more properties that are found on the fractal settings toolbar: *roughness* and *seed*.



Roughness

Roughness is the amount of variability that the fractal exhibits from the pattern object. With a roughness setting of 0 (far left on the roughness slider), the fractal object looks the same as the pattern object. That is, a fractal line will look just like a normal line or a fractal curve will look just like a normal curve. With a roughness setting of 100 (far right of the roughness slider), the fractal line will be wild, and won't conform to the pattern object at all (except at the endpoints).

Seed






Seed controls the look of the fractal. Every different seed produces a different fractal object. AutoREALM normally manages the seed value automatically, including incrementing it after creation of every fractal object so your fractals will come out looking differently. You may want to change the seed if you are trying to form fit your fractal to a desired shape, or if you want to create multiple fractals with the same shape for special effects.

Freehand Drawing

Freehand drawing (both standard  and fractal ) can be used to draw an object by hand (well okay, by mouse). Click on either of the freehand tools to begin. Then, just hold down the mouse button, draw with the mouse, and release to create lines. You can make your freehand objects filled if you right-click *before* you release the left mouse button, and choose **Create Closed Figure**. Freehand lines are constructed with a polyline, and can be edited just like a polyline.

Icons


Icons are used to represent features on your map. Icons have a color, and outline color (set by the **Text Outline Color** button), a size, and an overlay. Icons are created by first selecting an icon from the Icon pages. Then click on the map where you want the icon placed. You can change the size of an icon by using the **Icon Size** slider in the Icon Settings toolbar.

You can use several icon placement methods. The simplest is single icon , which places an icon each time you click. Other methods are square , diamond , or random , which "spray" icons in an area in various patterns as long as you have the mouse button held down. The spacing between icons is controlled by the **Icon Spread** slider . Depending on your selection settings, you may have to Ungroup a spray of icons before they can be individually edited.


After placement of an icon, you can rotate it using the various rotate buttons. If you don't like the way an icons looks, you must decompose it to edit its features.

Text and Curved Text


Text

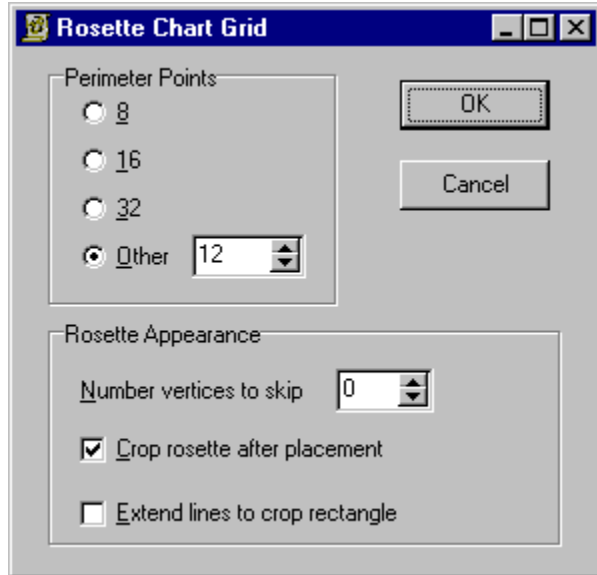
Text is used for labeling your map. Text properties include the color, outline color, alignment, the font, font attributes, and the text itself. To create text, click on the text button . The text toolbar will appear. Type in the text you want, and then click on the map where you want it placed. (The size of the text may vary with your zoom level depending your selection settings.)

Curved Text

Curved text is just like text, except it follows a curve. Start by clicking on the curved text tool . The text toolbar will appear. Type in the text you want. To place it on the map, click on the starting, ending, and two control points that specify a curve. The text will be fitted to the generated curve (shown by a red guideline).

Rosette

The Rosette tool is a quick and handy way to make your map look like an antique! It creates old-fashioned chart navigation rosettes as found on very old maps. It can be used for other special effects as well. To start, select the rosette tool .



Perimeter Points are the number of points you want around your circle. Most old maps use 16 or 32, but you can select your own number of points if you wish.

Number of vertices to skip controls the lines that are drawn. Skipping 0 means draw a line from each point to every other point. Skipping 1 means draw a line from each point to every point besides the two adjacent points (i.e. skipping one vertex in each direction). Skipping 2 means draw lines to all other points besides the four adjacent points (skipping 2 in each direction). And so on.

Crop rosette after placement lets you conform your rosette to a rectangular area by removing parts of the lines outside that rectangle.

Extend lines to crop rectangle can only be used if **Crop rosette** is checked, and it extends the lines of the rosette to meet the crop rectangle.

After selecting your rosette options, click **OK**. Then, click on the map at the center of the rosette, and drag to an edge. Release to create the rosette. If you haven't selected **Crop rosette after placement**, then you are done! If you are cropping, the cursor will change to a square shape. Click in the upper left corner of a cropping rectangle, drag to the lower right corner, and release the mouse button. The rosette will be clipped (and/or extended) to the rectangle you've specified. *Note: The crop rectangle may be larger than the entire rosette, and in fact probably will be if you are using **Extend lines to crop rectangle**.*

Rosettes are constructed with lines, and the lines can be edited just like other lines (depending on your selection settings, you may have to Ungroup the rosette before it can be edited).

Bit Maps

Bitmaps can be pasted from the clipboard or inserted from files. Although you can't edit bitmaps from within AutoREALM, you can resize, move, rescale, and flip them.

Customize Your Setup

Overview

AutoREALM can be customized to fit how you work:

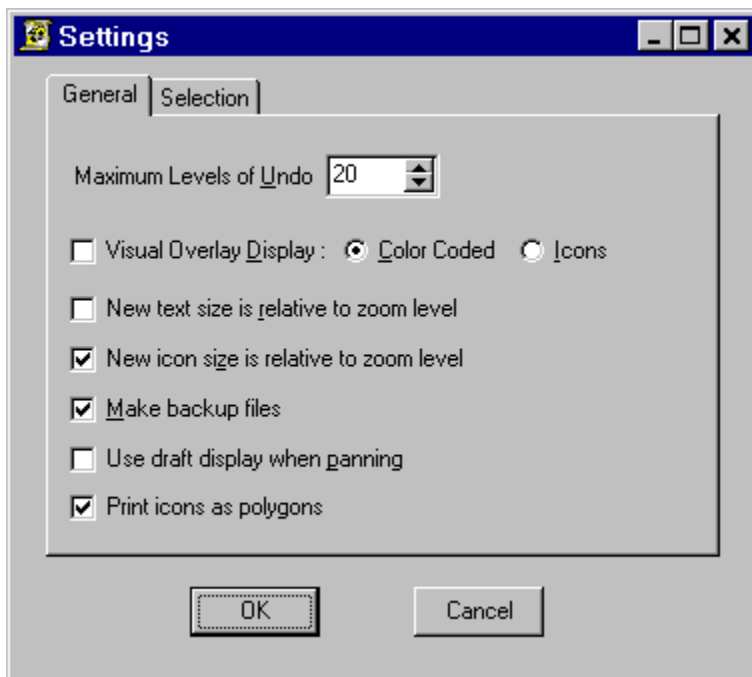
The toolbars can be rearranged and removed.

Each map has settings that apply to the entire map and to each view.

Through **Options | Settings** you can alter many AutoREALM features.

General Settings

Use **Options | Settings** to change general behaviors of AutoREALM.



Maximum Levels of Undo

Sets the number of actions that AutoREALM will be able to undo. More memory is consumed when this number is larger. You shouldn't need to change this setting, but if your system has a marginal amount of memory, you may be able to slightly improve performance by setting it lower.

Visual Overlay Display

If checked, each object is displayed in a way to make it apparent which overlay it belongs to. If **Icons** is selected, objects display a small icon near their corners that represent the overlay. The same icon is shown next to the overlay name in the Overlay List. If **Color Coded** is selected, each object is drawn in a color associated with the overlay (again, shown next to the overlay in the overlay list) instead of their true color.

New text/icon size is relative...

If checked, icons and text are created at a point size relative to the screen zoom level. That is, if you place 10 point text, then zoom in and place another piece of 10 point text, the size of the two pieces of text will be different, since they both will have been the same size when added. If unchecked, text or icons are always created at the specified size, regardless of zoom level. That means that in the above example, the two pieces of text would be the same size, but would differ from the size of the text as shown in the text toolbar.

Make backup files

If checked, AutoREALM creates a backup file when saving with the extension .BAK.

Use draft display when panning

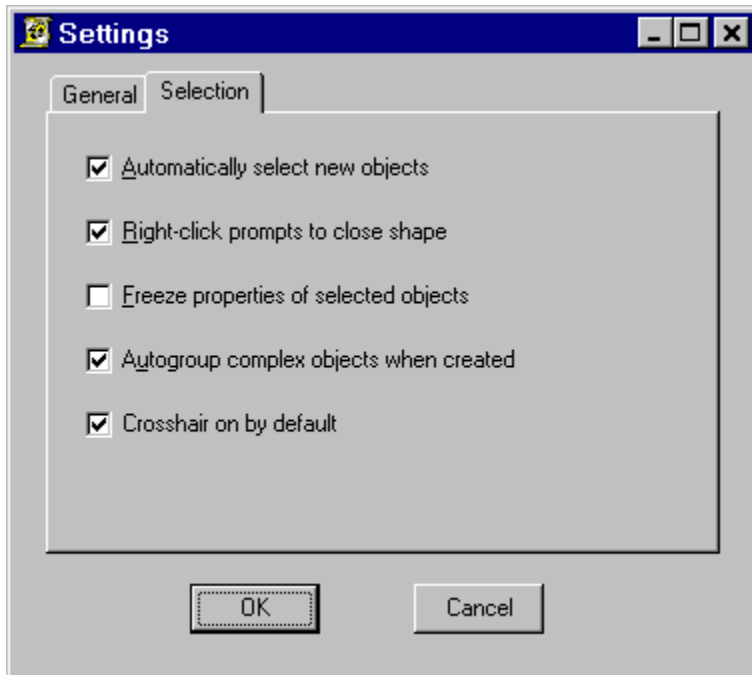
If checked, panning will not show full detail of new areas that come into view. Instead object outlines will be shown. This greatly speeds up panning for complex maps or slower machines. If unchecked, panning into new areas of the map will show full detail.

Print icons as polygons

If checked, AutoREALM will convert all icons from a font representation into filled polygons when printing to a printer. You may not get exactly what you see on the screen when this option is checked. It is available as a workaround for printer drivers that cannot properly print AutoREALM maps. If you find that your icons are being printed out as letters, digits, or punctuation, you should turn on this option.

Selection Settings

Use **Options | Settings**, and select the **Selection** tab to change settings affecting selection.



Automatically select new objects

When each object is created, it will automatically be selected. This is useful because you can change the color, style, overlay, or size of the newly created objects to fit your map. You may find that you are always accidentally changing new objects when you don't intend to: clearing this checkbox will create new objects unselected, so you have to explicitly select them to change them (see also *Freeze properties of selected objects* below).

Right-click prompts to close shape

This checkbox toggles between the quick way to create closed polygons and the easy way to create them.

Freeze properties of selected objects

This option allows you to change color, style, overlay, or size toolbars without affecting any selected objects. Similar to *Automatically select new objects*, you can try using this option if you find yourself accidentally altering objects.

Autogroup complex objects when created

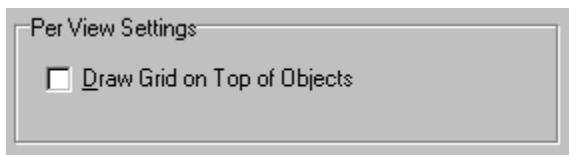
This setting causes circles, squares, rosettes, and icons to be placed in a group immediately after placement. This makes it easier to move, resize, delete, or alter the objects as a group. When this checkbox is clear, the objects aren't grouped, which means that their handles can be altered.

Crosshair on by default

AutoREALM can use a green crosshair that extends all the way across the screen vertically and horizontally to help you align objects. The default setting is off, which means that the crosshair will only be on when the **Scroll Lock** key is **On**. If the setting is on, then the crosshair is on by default, but can be turned off by pressing on the **Scroll Lock** key.

View Settings

To change settings associated with a View, select **File | Properties** (or press **Alt+Enter**), and click on the **Grid & Snap** tab.

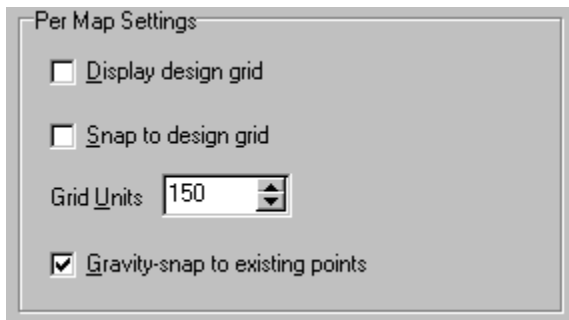


Draw Grid on Top of Objects


When checked, the hex, square, or triangle grid is drawn on top of all objects. This is useful for dungeon maps with a dark background. That way the grid will be superimposed over the rooms and other map features. When the checkbox is clear, the grid is drawn underneath all objects. In continent maps, this means that the landforms will obscure the grid, but the water will display the grid.

Map Settings


To change settings associated with the entire map, select **File | Properties** (or press **Alt+Enter**), and click on the **Grid & Snap** tab.



Display design grid

When checked, a grid of dots is superimposed on the map to aid in design. The  button on the Settings toolbar lets you quickly turn this feature on and off.


Snap to design grid

When checked, objects will be snapped to the closest grid point. The  button on the Settings toolbar is a shortcut.

Grid Units

Sets the spacing between points on the design grid. Larger numbers are further apart.

Gravity-snap to existing points

Toggles gravity snap on and off, where handles are snapped to nearby objects on the map. The  button on the Settings toolbar is a shortcut.

LEDs on snap buttons

The small green LEDs in the lower right corner of the snap buttons light up while during editing if either of those two snap methods is currently being applied. You can use this visual clue if you are having trouble moving an item where you want it to go: if a LED is lighting up, you may have to turn off one or both of the snaps to allow you to precisely place the object.


Tips

How Do I... ?

Here are some answers to common questions about how to achieve specific actions or effects in AutoREALM.

General


Create Graph Paper

Have you ever had problems finding hex graph paper? To make your own graph paper, start a new map. Then change the grid settings to make a hex, square, or triangle grid. Move the grid size slider to select the number of squares per inch. You can change the bold grid setting  to draw a heavier grid line every N lines. Now you can print off as many sheets of your customized graph paper as you want. (**Note:** The number squares per inch is only valid while you don't change the area to be printed.)

Do I adjust the number of square per inch?

Click on the Grid Size "thumb" in the Graph Paper toolbar and slide it back and forth for coarse adjustment. (The Grid Size slider is underneath the **Number squares/inch** label.) For fine adjustment, click in the white slot on either side of the slider and hold down; the slider will adjust by very small increments while the mouse button is held down.

Draw freehand with a thick "pencil"?

Select one of the thick line styles in the line style toolbar (one of the first several choices). Select the freehand tool . Now, draw with the mouse to make thick lines.

Make a double line?


Select the double-line styles in the line style toolbar. This is one of the choices on the second page of line-styles; click the drop-down arrow next to the line style, and click on the down arrow to scroll down to see more line choices. Select one of the line tools, and draw with the mouse.

Know what changes I've made to a file?

If you try to exit AutoREALM without saving a file, a dialog box will pop up describing what changes have been made. Instead of just telling you that something has changed, AutoREALM tells you what changed so you can decide if you need to save the file or not.

Export a metafile or bitmap for use in another program?

If you want to use a metafile (for use in drawing or drafting) or a bitmap (for painting) in another program, you have two options.


- 1) Save your map as a .WMF, .EMF or .BMP file. Load the file in your other program.
- 2) Select the region you want to copy (or choose **Edit | Select All**). Press **Ctrl+C** or click the Copy button . Switch to the other program and choose **Edit | Paste**. Depending on the program, either a metafile or bitmap will be pasted. Some programs may allow you to choose; these will have a "Paste Other" or "Paste Special" command.
- 3) For bitmaps, the bitmap size created is the same as your current zoom level. To make a very large bitmap with a lot of detail, zoom in to the map. To make a smaller bitmap with less detail, zoom out.

Import bitmaps or metafiles into AutoREALM?

You can either cut and paste bitmaps or metafiles into AutoREALM from another program, or use the File | Insert menu option, and select either BMP, WMF or EMF file types. See Inserting Files.



Fills


Create a filled object?

To create a filled object, select the polyline tool . Click on the vertices of the object, then right-click. Choose **Create Closed Figure**. Now, you can select your fill color and pattern using the second and third buttons on the color toolbar.

Create a filled object with on edge fractal and the other edge straight?




- 1) Using the Fractal tool , create a fractal line.
- 2) Using the Polyline tool , create a "cup" shape.

3) Using the Glue tool , click on the left endpoint of the straight line, drag it over the left end of the fractal line, and release.

4) Select the object. Pick **Transform | Close Selected Figures** from the menu. Click on the fill color to color your object.

Create two objects on top of each other?

For some special effects (i.e. using more than one line style for the same object) require you to create two objects in the exact same location. Choose **Transform | Create Array** from the menu. Type **2** for the Horizontal Count, **0** for the Horizontal spacing, and select **Every**. Click **OK**. To alternate the selection between the two objects, use **Alt** and the select tool , and drag a selection rectangle over the area. The objects will alternatively be selected each time you use **Alt** with a selection rectangle.

Shortcuts

Use snap features while adding objects?

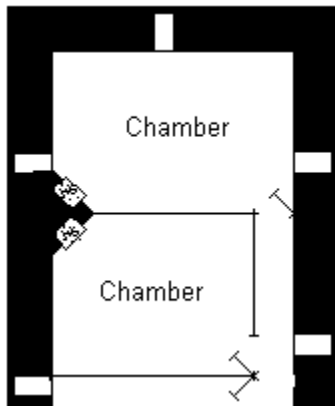
Although gravity or grid snap are useful features, you may find it difficult to place objects exactly where you want them if they are active. (The green LEDs on the buttons indicate when each snap is being applied.) You can enable or disable either snap while you are adding objects by pressing **Ctrl+S** (grid snap) or **Ctrl+G** (gravity snap). That way, you can make some points on a line conform to the grid, and turn off mapping to make the rest of the line irregular (or vice versa).

Make perfect circles, squares and regular polygons?

To make a perfect circle, square, or regular polygon, hold down the **Shift** key while creating the object.

Map Features

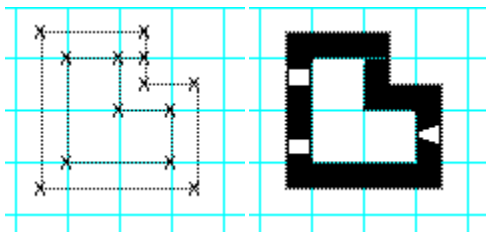
Make arrow slits or windows in castles?



There are two general methods for achieving the effect to the right.

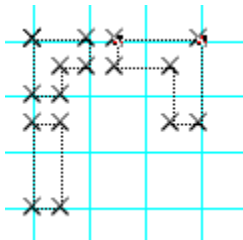
Method 1

Create the wall with a filled [polyline](#) around the entire perimeter of the building, and then "cut out" the battlements and windows with white filled polylines.



Method 2

Create the wall with a filled polyline section between each battlement.

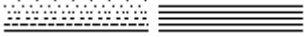


Make water ripples around a coastline?



To make water ripples around a coast, follow these directions: 1) Use the

fractal polyline or freehand fractal tool to draw the outline of the coast. Make sure you make the shape closed.

2) Select the water line style. Pull down the center line style combo box, and page down several pages until you find either of these two line styles: 

3) If the line appears on the inside of the land boundary instead of the outside, select Reverse Line Direction.


4) For a shape that isn't completely convex, your water lines may appear inside the land borders. This effect shows marshy conditions around inlets.

If you don't want any lines inside the land boundary, follow these additional instructions:

5) Use **Transform | Create Array** to create a duplicate land boundary. Use **Horizontal Count** of 2, select **Every**, and choose **0** spacing. This will create two identical objects on top of each other.

6) Use **Alt+Click** near the edge of the land, and only one of the two landforms will be selected. Use **Bring to Front**, change the line style to solid instead of water, and select a fill color other than None. This will create a filled land outline in front of the water background that will block out any details drawn inside the water's edge.

Make horizontal and vertical doors?

To make horizontal doors is easy: just select the door icon from the Dungeon icon page, and click on the map. There is not a separate vertical door symbol, but you can place a horizontal door and click the rotate 90° button .

Make double doors?

There isn't a double door icon, but you can easily make one. First create a door using the Dungeon icon page. If the door is vertical, click the Rotate 90° button. Next choose **Transform | Create Array** from the menu. Depending on if your doors are horizontal or vertical, choose a count of **2**, select **Every**, and spacing of **0** in either the Horizontal or Vertical section, and click **OK**.

Make doors that "break" wall lines instead of letting them show through?



If you place a door icon on a line it will look like the left hand door. To cause the door to break the line like the right hand door, select the door and click Decompose. This converts the door from a icon to two filled rectangles, which will cover the wall.

Selection

Copy the color or linestyle from one object to another?

To copy the color or line style from one object ("**From**") to another ("**To**"), follow these steps:

- 1) Select the object with the property you want to copy (the "**From**" object). The color and line styles of that object will be displayed.
- 2) Hold down **Ctrl** and **Alt** and click near a corner of the "**To**" object. This will add the "**To**" object to the selection. (If you want to change more than one object, hold down **Ctrl**, and click and drag a selection rectangle around the "**To**" objects.
- 3) Now, *reselect the color or line style already shown*.

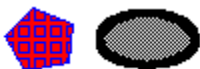
The following shows an example:


Copying Properties

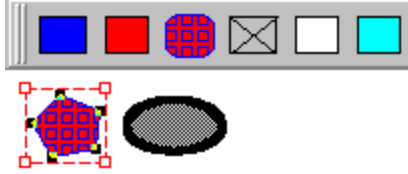
To copy the color or line style from one object ("**From**") to another ("**To**"), follow these steps:

- 1) Select the object with the property you want to copy (the "**From**" object). The color and line styles of that object will be displayed.
- 2) Hold down **Ctrl** and **Alt** and click near a corner of the "**To**" object. This will add the "**To**" object to the selection. (If you want to change more than one object, hold down **Ctrl**, and click and drag a selection rectangle around the "**To**" objects.
- 3) Now, *reselect the color or line style already shown*.

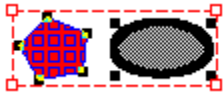
As an example of copying properties from object to object, say you have two objects, a pentagon and an ellipse. You want to copy the square pattern and colors from the pentagon to the ellipse.



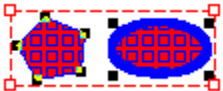
- 1) Using the selection tool , click and drag a rectangle surrounding the pentagon. The color and line style toolbars will change to reflect the pentagon's properties.



2) Add the circle to the selection by holding down **Ctrl** and **Alt**, and clicking near the edge of the ellipse.



3) Reselect the colors that are already set. Click on the fill color button (red) and click on the highlighted red color from the color palette. Do the same for the main color (blue) and pattern.



The colors and fill pattern have been copied to the new object; the line style remains the same.

Prevent changes to objects after I add them?

If you find yourself accidentally changing objects, try one of the following:

- 1) Turn off **Automatically Select New Objects**.
- 2) Turn on **Freeze Properties of Selected Objects**.
- 3) Remember to press **Esc** or **Ctrl+N** before you set colors




Each of the methods is a little bit different; you may have to experiment with them to see which works best for you.

Remove the select rectangle?


Either press **Esc** or **Ctrl+N**, or right-click and choose **Select None**.

Rosette

Create a rosette with user-defined points as the vertices?

You can create a rosette with points where you specify (for example, you may have ten cities, and you want lines connecting all the cities). First create a rosette with the desired number of points using the Rosette tool . Then, click Ungroup . Next, using the mouse, drag each vertex to the desired location. Click group when done .

Make a five pointed star?

To make a five-pointed star, select the Rosette tool . Type in **5** for the number of Perimeter points and select **2** for the number of vertices to skip. Then, place your star! There is also a star icon in the Markers icon page.


Overlays

Rename an overlay?

There is no direct way to rename an overlay in AutoREALM. Instead, follow these steps:

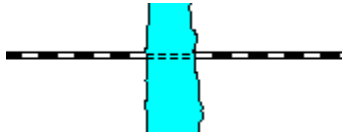
- 1) Create a new overlay with the desired name by typing into the [Active Overlay](#) and pressing **Enter**.
- 2) Select the overlay you want to rename in the [Overlay List](#) and press **Ctrl+Del** to delete it.
- 3) Answer **Yes** to delete the overlay, and **No** to removing objects in that overlay.
- 4) Using the **Replacement Overlay** dialog, choose the new overlay name from the list and click **Ok**.

Sort objects into the correct overlays?

To move objects into the right [overlays](#), click the [View Overlay](#) button . All objects will display in a different color, depending on their overlay. Now you can select the objects and change the [Active Overlay](#) to move them to the correct overlay.

Special


Create a line with more than one line style?



You can't create a single line with more than one line style, but you can make it look like you did. The example shows a road that changes to indicate a tunnel under the river. Here's how you do it:

- 1) Draw a line with the road style across the river.
- 2) Using the Scalpel tool, click and drag across the line where it touches the left and right edge of the river to add new points.
- 3) Still using the Scalpel tool, hold down **Ctrl** and click at the two points you just added. This separates the line into three separate lines.
- 4) Now, select the middle portion, and change the line style to a tunnel.


Individually place letters in curved text?

If you create a piece of curved text, but you can't quite get the letters where you want them, try this. Select the curved text. Now, click decompose . You can now individually select and move each letter.

Fill the inside of icons with a different color?





You can select an outline color for icons or text (left), but sometimes that isn't exactly what you want. To fill the insides of an icon (or text), select the text.

Use the Decompose button  to convert the icon into polylines. Then with the select tool, use **Alt+Click** to select the inside polygons. Use the color toolbar to change their fill color.




Use a strange font in my map on a different machine?

AutoREALM does not use Font Embedding. That means if you have a really neat font in your map, you can't share that map with other AutoREALM users unless they too have that font. You can, however, use the Decompose tool to convert the text into polylines, which then will appear the same on your friend's PC. (Note that you can't edit decomposed text without recreating it.)

Adjust fine detail of a fractal line?

The shape of a fractal objects is controlled by the  seed. This does not let you control the detail of the individual portions of a fractal, however. To do so, select the fractal, and choose  Decompose. This will convert the fractal into a polyline that you can edit each individual point if you wish.

Make a 90°, 180° and 270° arc?

- 1) Start by making a circle. Hold down **Shift** while creating the circle if you want the arc to be non-elliptical.
- 2) Click Ungroup  to remove any auto-grouping.
- 3) Click Decompose  to convert the circle from a polycurve into four distinct curves. Each will be an arc that extends 90°; where the arcs touch, there will be a hollow black handle.
- 4) If you want an arc of 180° or 270°, then use Glue tool  to glue some of the arcs back together. Move the glue bottle over the joints (at the North, South, East, and West points of the circle), click and release to glue the two adjacent arcs together.
- 5) Select and press **Delete** to delete the remaining portions of the circle that you no longer want.

Troubleshooting

General

My fill patterns are all completely black (or all one color).

This appears to be a problem with some display modes on graphics cards, and DirectX drivers for the card may either fix or exacerbate the problem. Two possible workarounds are available:

Try turning off the hardware accelerator on your graphics card and see if it makes a difference. To turn off hardware acceleration, go into the Control Panel, start System, click the Performance tab, then click on "Graphics...". Move your Hardware Acceleration slider all the way to the left (None). You may have to reboot after this.

Try using a different color mode (i.e. use 16 million colors, or 65535 colors, if you currently using 256 colors). Sometimes a bug in the driver isn't in all display modes but only one.

The solution to both of these problems is to obtain newer drivers for your graphics card, or to operate the card in a different non-buggy mode. Try visiting your graphic card manufacturer's site to see if any newer device drivers exist.

When I decompose a filled object, the inside goes "blank".

Decomposing an object converts it into simpler objects. If you decompose a filled fractal, for example, it will become a filled polygon. If you decompose that once more, it will become just a set of lines (and the filled portion will disappear). Fills are only supported within a single object. Once you cause the object to become two or more objects, you lose the capability to fill it. You can either use Undo to restore your original object, or you can Glue all the individual line segments together.

I used the Alignment tool on a fractal and ended up with a "haystack".

If you have used the Alignment tool on an object, and you end up with a stack of sorted horizontal or vertical lines or a small "star", you may have decomposed the object. An object that has been decomposed into lines is no longer a single object, but many individual lines. Align then works on those lines instead of the full fractal, and sorting them gives the result you see.

Send to back doesn't seem to be working.

[Send to Back](#) may not appear to work for these reasons:

Are too many objects selected?

If the object you're sending is selected, but the object you want in front is also selected, the net effect will be no change. Make sure only the object you want sent behind is selected.

Are the objects part of a group?

Try ungrouping them and select individual objects to SendToBack.

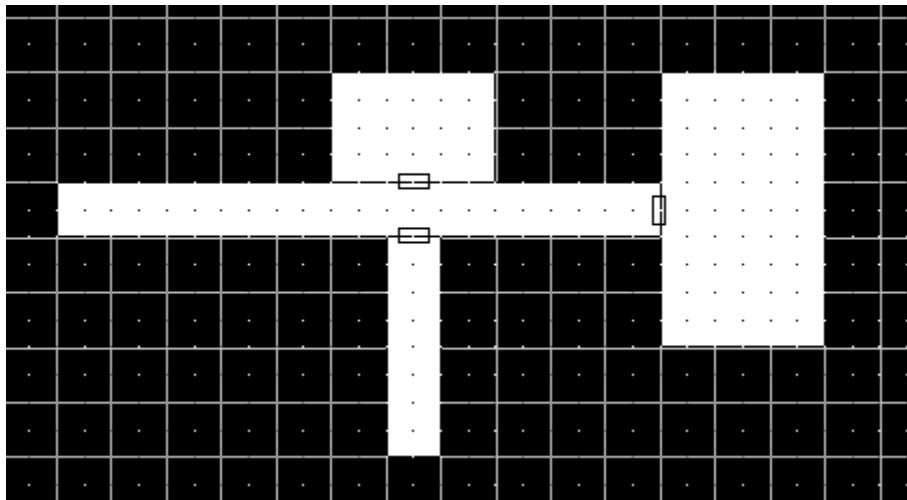
You can't send behind or bring in front of the grid, but you can change the grid's properties to do that for all objects.

I can't seem to extend a shape with the glue tool.

You cannot use the Glue tool to extend a filled object. Glue will only work with the open ends of an object. To convert a closed object into an open one, select the Scalpel tool, hold down the **Ctrl** key, and click on one of the corners of the object. You can now use glue to attach things where you separated the line. Also, make sure you are holding down the mouse button during the glue operation, releasing only once when the black glue bottle is over the point to attach to.

I'm trying to draw a dungeon and not having much luck.

AutoREALM has default grid sizes that work well for a dungeon. You probably will want to turn on the Design Grid and Snap to Grid features (⋮). You also may want to change the background color to black. Then use the Rectangle tool to layout your rooms and corridors on the graph lines (i.e. every other grid point). Door icons can be centered in between two grids (size them to the correct size after placement) in a hallway. Use the Rotate 90° button after you've placed a door to make vertically aligned doors.



My lines aren't snapping to the grid.

If you are adding lines that you expect to be snapping to the grid, you might check the following:

Is Snap to Grid turned on?

Is Gravity Snap turned on so the points are snapping to objects that are closer than a grid point?

The LED on the Grid Snap button will light when it is actively snapping.

Icons or toolbars appear to be truncated on the screen.

If you are running at least 800x600 screen resolution, try setting the display to "Small fonts" instead of "Large Fonts". If you are using 640x480 screen resolution, try increasing it!

How do I change the setting from inches to centimeter (or vise versa)?

This is a known problem with AutoREALM. The way to adjust the grid size is with the slider bar on the graph paper toolbar, which shows you how many units/inch on the page. However, because of an existing bug it is not always accurate (as you may have already discovered), and is really only an estimation. If you start with a new map, change the scale as you desire and print a test page if you've got the right scale or not. If not, you can adjust it from there, and once you do find the right settings, save it!

The use of inches vs. centimeters is based on your Windows international settings. To change it, go into the Control panel and change your setting from metric to English under (depending on your version of Windows) either International Settings, Local settings, or Regional Options

Lines and Curves

Cutting a line or curve with the scalpel has no effect.

If you are not having any effect with the scalpel tool, these could be reasons:

Curves cannot be modified by the scalpel tool.

Are the objects part of a group? Try ungrouping them and then scalpel them.

Are the objects in a frozen overlay? Try selecting them, and if you get a warning about the objects being frozen, unfreeze that overlay.

Fractal lines are cut along the guideline, not along the actual fractal.

When I scalpel a fractal line, the line jumps.

Fractal lines are not cut by the scalpel along the actual fractal, but rather along an imaginary guideline that connects the two points on either end of the fractal. If you cut a fractal with the scalpel, the line may "jump", because the actual cut point is significantly different from where your line intersected the fractal. Select the fractal and move the handle to the desired location after the cut.

I can't cut a line in two.

Cutting a line in two requires two steps with the scalpel tool. First, you must have a handle at the place you wish to separate the line. Click and drag the red scalpel across the line where you want a handle added. Second, hold down **Ctrl** and click with the scalpel tool on that handle to separate it into two lines.

I right-click and choose Close Figure but nothing happens.

The Close Figure option in the right-click menu only works when you are actively placing a line. To close a line that you've already finished, select the line and choose Close Selected Figures.

After I close a polycurve, the last segment is straight.

The last curve segment of a polycurve is still a curve, but all the control points have been placed on top of the last point so it appears as a straight line. To make it a "real" curve, select the polycurve, hold down the **Alt** key, and drag handles off the end point. You should see the curve take shape as you pull the overlapped handles apart. **Alt** is used during handle movement to separate overlapping points (or in the case of a polyline, create additional points).

A castle (or other) line style is joined correctly until I zoom in or out.

The method that AutoREALM uses to create non-solid line styles is based on pixels. The size of the line style features remain the same, regardless of the zoom level. That means that zooming in or out may change the positioning of the symbols on the line. To alleviate this effect, you can either make line endpoints that hide the discontinuity, make the lines end within solid structures, or try to use a single continuous polyline instead of multiple single lines.

Text and Icons

The printout has "scribbles" behind some pieces of text.

If your printout has random "scribbling" behind text with a colored outline, you may have a bug in your printer driver. Contact your printer manufacturer to see if you can get updated printer drivers (they must support "paths"). You can also try turning on **Print Icons as Polygons** in the **Options | Settings** dialog.

I can't seem to get two pieces of text the same size.

Text (and icon) sizing has two options in AutoREALM.

The first is that it is placed absolutely the same size, regardless of the zoom level. That means that if you are zoom in on a map, the text in the text toolbar will be much smaller than the size of the text after it is placed. This keeps your text size *absolute* with regard to the zoom level.

The second option is to place the text on the map the same size as it actually appears in the text toolbar. This means that if you zoom in, the text size after placement will match that in the toolbar, but if you zoom back out, it will be much smaller. This keeps the text size *relative* to the zoom level.

You can toggle between the two choices for icons and text under the General Settings.

I've decomposed some text or icons and they don't look right.

Decompose on text and icons converts the symbol into a set of polylines. This conversion is not always perfect, and may have left the insides of letters the wrong color, or placed the insides of letters behind other parts of the letter. To correct those problems, try selecting the outermost polygon (hold down **Alt** and click near its edge). Then use Send to Back to show the inside of the letter. You should be able now to select just the inside polygon and correct the fill color if necessary.

The background behind my text makes the text unreadable.

If there is too much clutter behind a piece of text you want to read, try selecting the text and changing the outline color (the fourth button from the left in the Color Toolbar). This will place a "halo" of color around the text, which should make it easier to read.

When I rotate text or icons, they look less defined or sharper.

Rotating text (or icons, since they are part of a special font that AutoREALM uses) may cause them to display differently. If Windows is set up to smooth edges of screen fonts (an option with Microsoft Plus! on high color screens), you will get this effect. The cause of the effect is that the Windows font renderer will only smooth fonts that are displayed in the normal orientation. If you rotate a font at all, the font will not be smoothed.

Printers will not have this problem, and will display text and icons the same way no matter what the rotation of the text or icon is. On the screen, you can turn off this effect if it bothers you, but this will turn off font smoothing in every other program as well. To turn it off, right-click on your desktop, choose **Plus!**, and turn off **Smooth edges of screen fonts**.

Handles

Why are some handles hollow?

Handles are small boxes that AutoREALM displays on selected objects. Handles show you where you can modify the object by clicking on the handle and dragging it. There are three kinds of handles that AutoREALM displays.

Black solid. Standard handle used for endpoints of a line, intermediate points on polylines, control points on curves, and corners of groups, icons, or text.

Black hollow. Used when handles for two consecutive objects overlap at the same point on the screen.

Red hollow. Used for the four corners of the selection region. Moving these handles changes every object in the selection.

As soon as I drag a hollow handle, it disappears. Why?

Hollow handles represent more than one point at the same coordinates. AutoREALM merges handles of a polyline together when you drag one on top of another. Since the hollow handles start off on top of each other, as soon as you drag the handle, the two points are merged together.

Bitmaps

I can't seem to open exported bitmaps. What's wrong?

AutoREALM exports bitmaps as a DIB (Device Independent Bitmap). Some programs do not know how to interpret this format. You should be able to open exported bitmaps with the Paint program that comes with Windows, however. From there, you can either resave, or copy and paste into the favorite bitmap editor of your choice.

Printing

I want to print maps with an exact number of squares per inch / cm but they aren't printing correctly.

This is a known problem with AutoREALM. The way to adjust the grid size is with the slider bar on the graph paper toolbar, which shows you how many units/inch on the page. However, because of an existing bug it is not always accurate (as you may have already discovered), and is really only an estimation. If you start with a new map, change the scale as you desire and print a test page if you've got the right scale or not. If not, you can adjust it from there, and once you do find the right settings, save it!

The use of inches vs. centimeters is based on your Windows international settings. To change it, go into the Control panel and change your setting from metric to English under (depending on your version of Windows) either International Settings, Local settings, or Regional Options

The printout has letters instead of some icons.

If your printout has letters (or other symbols) in place of icons, your printer may not have enough memory. Other than increasing the amount of RAM in your printer, you can try reducing the memory requirements of your printer by:

Turning on **Print Icons as Polygons** in the **Options | Settings** dialog.

Printing your map on a smaller part of the page (select a larger region in the print dialog).

Using fewer complex fonts.

Turn off the background square, hex, or triangle grid.

Convert a group of similarly (but different sized) icons to use the same size.

Unit Definitions

Here are the units used by AutoREALM (in ascending length):

UNIT NAME	USE	DEFINED AS	COMMENTS
Centimeters	Translating paper maps into AutoREALM.	0.393700787402 Inches	
Inches	Translating paper maps into AutoREALM.	Itself.	All other units are internally represented in terms of inches.
Feet	Dwelling/Castles.	12 Inches	
Cubits	The distance unit of choice for several ancient societies.	20.6 Inches	This length is the Egyptian/Jerusalem cubit. Various cultures have expressed the cubit anywhere from 17.4 to 26.6 inches. Originally defined as the length from the elbow to the end of the middle finger.
Yards	Dwelling/Castles.	36 Inches	
Meters	Modern structures.	39.3700787402 Inches	
Fathoms	Depth of water or lengths of cable. Originally defined as the span of outstretched arms from fingertip to fingertip.	72 Inches	6 Feet
Rods	Surveying	198 Inches	1/4 Chain
Chains	Surveying	792 Inches	This definition is <i>Gunter's chain</i>
Furlongs	Villages	10 Chains	1/8 Mile.
Kilometers	Large Scale/Continent	.621371192238 Miles	
Stadia	Roman Large Scale	0.92 Miles	
Miles	Large Scale/Continent	5280 Feet	
Nautical Miles	Large Scale/Oceans. Used by Ships and Aircraft.	1.15077944802 Miles	1/60th of a degree on the surface of the earth.
Leagues	Large Scale/Continent	3 Miles	
Days by foot on rugged terrain, burdened	Measuring travel time.	5 Miles	Rough/steep ground, snow, forests; 40-80 pounds of gear.

Days by foot burdened	Measuring travel time.	10 Miles	Physically fit individuals; 40-80 pounds of gear.
Days by foot on rugged terrain	Measuring travel time.	15 Miles	Rough/steep ground, snow, forests; light burden.
Days by wagon	Measuring travel time.	20 Miles	Horse drawn wagon; road or level open terrain.
Days by foot	Measuring travel time.	25 Miles	Physically fit individuals; light burden (no more than 40 pounds of gear); normal terrain (open ground, scrub, lightly forested).
Days by war horse	Measuring travel time.	30 Miles	Riding a heavy or draft mount; burdened with armor and war gear.
Days by oared galley	Measuring travel time.	35 Miles	Sailing a river 40' wide or more; calm ocean currents; navigable and familiar body; favorable wind conditions.
Days by horse	Measuring travel time.	50 Miles	Riding a light or medium mount; normal terrain (open ground, scrub, desert, lightly forested).
Days by sailed galley	Measuring travel time.	65 Miles	Sailing a river 40' wide or more; calm ocean currents; navigable and familiar body; favorable wind conditions.
AU	Solar Systems	9.29558254792x10 ⁷ Miles	The mean radius of earth's orbit.
Light years	Star Systems	5.87849981414x10 ¹² Miles	Distance that light travels in one year in a vacuum.
Parsecs	Star Systems	1.9173515332x10 ¹³ Miles	A parallax second; distance that produces a viewed difference of one arc second from opposite sides of earth's orbit.

AutoNAME RUL Files

AutoNAME uses a RUL file to generate random names. You can create your own RUL files if you want to generate your own style of names. AutoNAME RUL files are a text file with an extension .RUL; you can use Notepad to create one. Looking at the example RUL files is probably the best place to start with your own. Here are some tips on how to construct a RUL file.

A RUL file describes a context-free grammar that chooses which rule to follow randomly. An example RUL file (this is a much abbreviated version of "Terrible Places.rul"):

```
// A RUL file example...
```

```
NAME=>[ADJ] PLACE[ of ADJ NOUN]
```

```
[The ]PLACE of ADJ NOUN
```

```
[The ]PLACE of OWNER
```

```
PLACE =>Bog
```

```
[10%]=>Catacombs
```

```
=>Cave
```

```
OWNER => The [ADJ] MONSTER
```

```
=> [The ]{MONSTER}s
```

```
MONSTER=>Beast
```

```
Creature
```

```
NOUN=>Horror
```

```
Chaos
```

```
ADJ=> Sooty
```

```
Wretched
```

```
// Replacement rules; applied after all production rules are finished.
```

```
The The==The
```

```
s's==s'
```

There are two types of rules used in the .rul files read by AutoNAME. They are production rules (\Rightarrow) and replacement rules (\equiv). Comments are started by //, and continue to the end of a line.

Production rules govern generation of strings in a context-free grammar, are randomly selected (using either an equally divided percentage, or one supplied by the user). Although all non-terminals are by convention upper-case, any series of consecutive alpha characters can be used as a non-terminal. Any non-alpha characters can be used to separate a non-terminal. To place two non-terminals immediately adjacent to each other, or to place alpha letters next to a non-terminal, you must enclose the non-terminal in curly braces.

The first non-terminal in the file is considered the primary rule, and is used to start each generated name. Any line that is missing a left hand side or arrow uses the last valid non-terminal.

Production rules may have a percentage or weight to the left of the arrow. All rules that are part of a non-terminal that do not have a specified probability divide the remaining probability equally among themselves. E.g.

RULE [%25] \Rightarrow One quarter the time

[%50] \Rightarrow One-half the time

[.10] \Rightarrow Ten percent of the time

\Rightarrow Remaining percent split between this rule...

\Rightarrow ...and this one, for 7.5% each.

The following special symbols are used in production rules:

"" Quotes the rule contents.

E.g. RULE \Rightarrow "His'n hers"

{ } Used to separate two adjacent non-terminals.

E.g. RULE \Rightarrow {FIRST}{LAST}

Also contains dice roll expressions, like 3d6, etc. for rolling dice. Rolls must be of the form

{<NUMDICE>d<DIEFACES>[Max|Min<INTEGER>][+|-<INTEGER>]}

E.g. RULE \Rightarrow {3d6}{4d4+2}{5d6Max3}

[] Contents of brackets are inserted 50% of the time.

E.g. `RULE => This [and] that`

Replacement rules are applied after all production rules are finished. Replacement rules occur in order, replace until no longer applicable, do not require any particular strings on either left or right hand sides, and are always applied (i.e. not random).

Note: You can include more than one rule file in another by using `#include <filename>`. No quotation marks or delimiters are required around the filename included. For example, this rule file includes the contents of two others:

```
// Example for nesting rule files
```

```
#include first.rul
```

```
#include second half.rul
```